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A HANDBOOK
OF
OBSTETRIC AND GYNÆCOLOGICAL
NURSING

Being the Fifth Edition of a "Manual for Midwives"

BY THE LATE

FLEETWOOD CHURCHILL, M.D.

FORMERLY PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS IN
IRELAND.

Revised and Greatly Enlarged

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P R E F A C E.

OF the many works by which the reputation of the late Dr. Fleetwood Churchill as an obstetric authority was established, none better served its purpose, or obtained a larger circulation in its day than his "Manual for Midwives and Monthly Nurses," in which the first successful attempt to improve the training and position of the *Sage-femme* in these countries was made. This Manual being for some time out of print, the preparation of a new edition was suggested to the present writer, by whom, it was undertaken in the hope of thus extending the utility of the work of a teacher so respected, and a personal friend so valued as Dr. Churchill. To present, however, a serviceable Compendium of modern Obstetric and Gynæcological Nursing, so great have been the changes in these departments within the past twenty years, that it was found necessary to re-write, expand, or alter almost every page of the practical portion of the work to such an extent, as without this statement would have rendered it unfair to Dr. Churchill's memory, and to the reader, to present in a work coupled with his name opinions in any way differing

from those he maintained, or to represent him as sanctioning or recommending methods of practice which in his day were unknown.

Hence, whilst fully acknowledging Dr. Churchill's Manual as the foundation, more especially of the earlier or obstetric chapters of this book, the editor must assume the chief responsibility for the views and methods of practice advocated in the following pages, much of which was put together for a course of lectures designed for nurses and probationers under training in his hospital. The foregoing account of the genesis of this volume may serve to explain the occasional reiteration of important facts, and the somewhat homely or colloquial style which, following Dr. Churchill's phraseology as far as possible, was employed in those lectures, and has been here retained, as being probably no less suitable for the perusal than for the verbal instruction of those who are thus addressed. And also, because the pressure of busy professional work, connected with hospital and private practice, and other writings, have left little leisure for correction of the literary style of a book in which the conveyance of as much practical information as possible within the limits available was more essential than the elegance of its expression.

In one respect the editor may claim that such of Dr. Churchill's obstetric views, or of his own, as

are included in the subsequent chapters, are entitled to some consideration, viz., that in both instances they are the result of long clinical experience and observation, being, to quote the words of an ancient writer, "not the feigned or surmised thoughts of man's fantisie, sitting or meditating in his study, but that which really have been performed in the travailing woman's chamber." (*Willoughby*, 1669).

With regard to the instructions for gynæcological nurses laid down in this Handbook, these, it may be observed, are identical with the practice adopted in the Mater Misericordiæ Hospital, where, to the strict attention given by the Sisters and by the Trained Nursing Staff to the principles and details of aseptic and antiseptic nursing the successful results obtainable in gynæcological cases and operations are largely due. Hence, those methods are here described and recommended for the adoption of others. From such sources have been derived the materials for the following Compendium of Nursing, in the two special branches, wherein a woman's care, kindness, and trained skill, may be most fitly and especially evinced, viz.:—when entrusted as a nurse with the charge of a sister woman in any of the sufferings peculiar to her sex. Finally, although the main object of this volume is to present a summary of all such information as may prove sufficient for the safe guidance of obstetric and gynæcological nurses, the writer would venture to

hope that some of the practical details herein contained may also be found deserving of the attention of students and junior practitioners in these twin branches of medicine.

It only remains for the writer to add that he is indebted to DR. J. M. WHITAKER for the assistance he has kindly afforded in the correction of the proof-sheets of these pages.

THOMAS MORE MADDEN.

55 Merrion Square, Dublin,

July, 1893.



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HANDBOOK OF MIDWIFERY.

PART I.

CHAPTER I.

INTRODUCTORY.

BEFORE entering upon the special subjects of this volume it may be well to mention certain qualifications which ought to be possessed by nurses and midwives, rather as a standard at which you may aim, than merely a test of your present attainments. It is a wise plan for each of us, in our several callings, to form a high estimate of excellence, and to make it our daily endeavour to approach it as nearly as we may be able.

1. A good nurse or midwife ought not only to be a woman of irreproachable moral character, but she ought to have a sense of religion. This will lead her to regard her office as one, the duties of which are to be conscientiously performed ; it will support her under fatigue ; and in the midst of scenes of difficulty, distress, and sorrow, will lead her to the only source of strength and wisdom.

2. She ought to possess a tender sympathy for the sufferings of others ; and, so far from interfering with her usefulness, this will render her efforts more diligent and untiring, at the same time that the gentleness and feeling she manifests will soothe the patient and acquire her confidence.

3. A habit of quick yet careful observation is essential, less she should overlook some important symptom, or undervalue some unusual occurrence, and so lose the

earliest opportunity of affording relief, or of sending for advice and assistance.

4. A fair amount of education should obviously be possessed by every midwife or nurse, for without these she could not properly be trusted with the duties of her calling without great risk. A higher degree of cultivation insures greater intelligence, and, as nurses have abundant leisure, they have time for improvement.

5. Neatness and cleanliness should characterize not only the nurse's person and dress, but the entire sphere of her duties. The arrangements of the sick chamber, of the bed, of the patient, and of the infant, should all be marked by order, cleanliness, and neatness. A slatternly nurse is generally something worse. You should have "a place for everything, and everything in its place." Her own dress should be of materials that will allow of being washed, and which will not rustle.

6. As tidiness should be the character of her department, so quietness and gentleness should mark her movements and actions. There should be no hurry, no bustle, no fuss. Everything should have its proper place, every duty having its proper time and order, that the patient may neither be flurried nor discomposed. A quiet tongue is also of great value, so that the patient may not be worried by much talking; nor apprehensive that domestic details will be repeated abroad.

7. When in attendance with a medical man, a scrupulous attention to his directions should be regarded as the nurse's first duty, on no account to be neglected from carelessness, or evaded at the request of the patient or her friends. As she is responsible to him for the faithful execution of his orders, she is so far answerable for the safety and life of the patient. She should carefully note any change that may take place, and if necessary preserve the discharges, as well as keep a record of the patient's morning and evening pulse and temperature for the doctor's inspection. To practise any improper concealment towards the attending physician is a gross injustice to both parties, which may cost

the patient her life, and bring well-merited disgrace upon the nurse.

8. The midwife or nurse should cultivate habits of perfect accuracy and truth towards the patient, her friends and the medical attendant: it is quite possible, and often necessary, to refrain from telling the whole truth to the patient, without telling what is untrue. For the sake of her own health, as well as for the efficient discharge of her duties, the midwifery nurse should be temperate, early and active in her habits, and of constant watchfulness, so long as she is in attendance upon a case.

CHAPTER II.

DESCRIPTION OF THE PELVIS AND ORGANS OF GENERATION.

Description of the Pelvis.—It would be superfluous to enter here on any very detailed account of the anatomy of the pelvis, and of the parts engaged in pregnancy and childbirth. We shall therefore merely refer to such points as are of practical importance. Of the structure which must be thus considered and with which as midwives you are most concerned, the first to demand your attention is the bony cavity or pelvis through which the child has to pass during parturition.

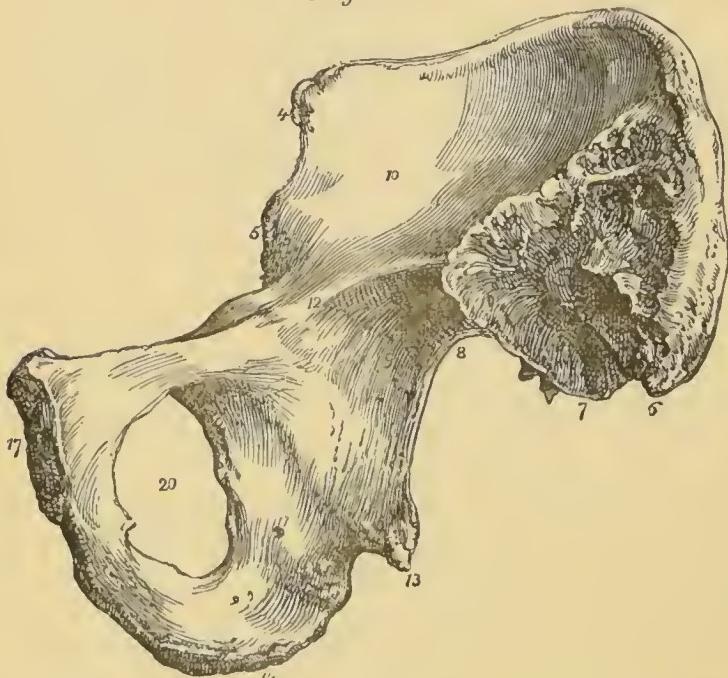
The pelvis or basin is an irregular bony cavity, situated at the base of the spinal column, and above the inferior extremities, with which it is connected by articulations and muscles. Forming one of the two mechanical elements of parturition, it is of great consequence to understand rightly its component parts, their connexions, relations, coverings, and abnormal varieties.

In the adult, the pelvis may be divided into four parts or bones; viz., two *ossa innominata*, the *os sacrum*, and the *os coccygis*; but in early life they are more minutely divisible. Let us now examine these bones separately.

Each Os Innominatum, at an early period of life, consists of three bones separated by cartilage. These three bones into which each os innominatum is divided at birth have received different names, and require distinct notice.

The Os Ilium, *hip, or haunch bone* (figs. 1 and 2) is

Fig. 1.



the largest of the three, of a triangular shape, situated superiorly, and with its fellow forming what is called the false pelvis.

Its *external surface*, or *dorsum*, is convex, irregular, with elevations and depressions which serve for the attachment of the glutæi muscles. Its *internal surface*, is concave and smooth, affording a bed for the iliacus internus muscle. The *lower portion*, body or base, is the thickest part of the bone, and forms more than one-third of the acetabulum or hip joint. Above the body, the bone spreads out into its *ala* or wing, which rises obliquely forwards, upwards, outwards, and then backwards, terminating in the crest—a semi-circular ridge of some thickness, which, at its posterior part, curves downwards and forwards. Its borders serve for the

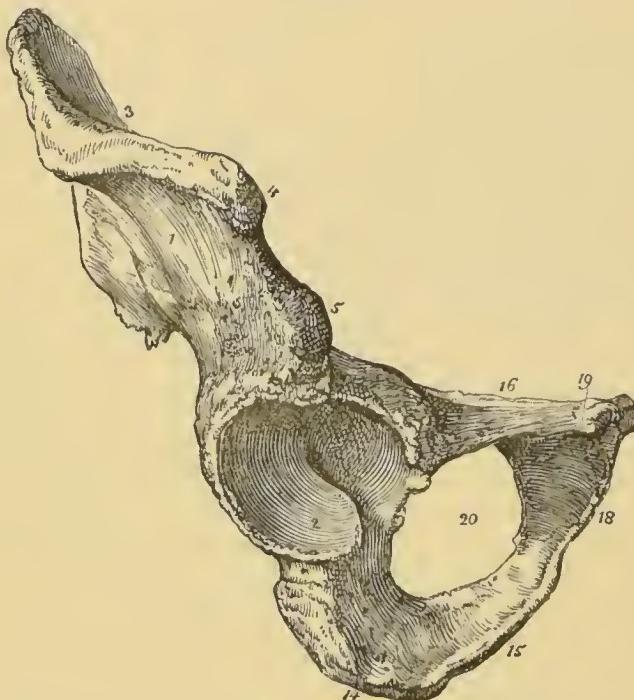
attachment of the abdominal muscles, and certain ligaments to be hereafter described; and it terminates anteriorly, in the anterior-superior and anterior-inferior spinous processes. To the former is attached pouparts ligament, and to the latter the straight head of the rectus femoris muscle. The posterior border of the ilium presents two projections or spines, posterior-superior and posterior-inferior, below the latter is a large notch converted into a foramen by the lesser sciatic ligament, which is attached by its apex to the spine of the ischium, and by its base to the lateral margins of the sacrum and coccyx. Through this foramen or notch pass the pyriformis muscle, the gluteal vessel and nerve, the sciatic vessels and nerves, and the internal pudic vessels and nerve.

Below the sciatic spine, and between it and the tuberosity of ischium, there is a second notch converted into a foramen by the great sciatic ligament which is attached by its broad base to the posterior-inferior spine of the ilium, to the sacrum and coccyx, passing obliquely downwards, outwards, and forwards, and is inserted into the inner margin of the tuberosity of the ischium, sending a prolongation forwards called the falciform ligament, which with the obturator fascia includes the internal pudic vessels and nerve which pass from without, inwards, through this notch. The posterior part of the crest of the ilium terminates in an irregularly oval rough surface, with numerous prominences, which occupy corresponding depressions in the sacrum, and constitute (with a thin layer of cartilage interposed, what is called the *sacro-iliac synchondrosis* of each side. The body of the bone is divided from the ala internally by a well-marked ridge,⁽¹²⁾ running from the junction of the ilium with the sacrum, forward; this is part of the *ilio-pectineal line*, and defines the boundary of the true pelvis.

Thus we find that the ilium is connected posteriorly with the sacrum, and identified anteriorly with the ischium and pubis in the acetabulum.

The ISCHIUM or sitting-bone is the lower of the three bones composing the os innominatum, and the next in size to the os ilium.⁽²⁾ Its base or body which forms the inferior portion of the acetabulum, is the thickest part; below this we find a narrower portion, from which a spinous process juts out backwards and inwards, and affords insertion to part of the sacro-sciatic ligament.

Fig. 2.



This process varies in length and direction, and is occasionally of some importance obstetrically. From the neck the bone descends downwards and forwards, until enlarging at its lower portion, it forms the tuberosity of the ischium or⁽¹⁴⁾ bony seat, a rough, thick protuberance; and turning upwards, at an obtuse angle, becomes the *ascending ramus* of the ischium. Its *internal* surface is smooth and even, and forms one of the *inclined planes* of the pelvic cavity. Its *external* surface is rough, and gives attachment to the sacro-sciatic ligament, and several muscles.

The PUBIS, or *share bone*, is the smaller and most

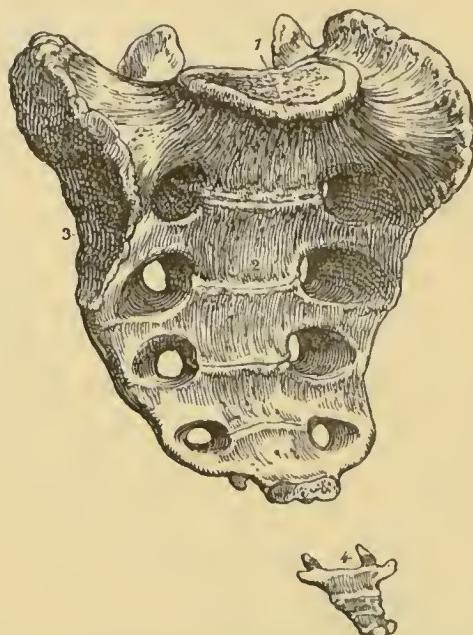
anterior of the three bones. Its base is the thickest part, and forms the anterior and smaller third of the acetabulum, beyond which the bone narrows; and, proceeding forwards, constitutes the *horizontal ramus* of the pubis; somewhat triangular in shape, and about half an inch in breadth. It meets its opposite at the symphysis pubis, and completes the anterior wall of the pelvis. From the inferior part of the symphysis, and at an acute angle with the horizontal ramus, a thin plate of bone, the *descending ramus*, proceeds downwards, to meet the ascending ramus of the ischium, and with it to form one side of the *arch of the pubis*. Upon the angle formed by these bones and their opposites will depend the dimensions of the arch, and the facility or difficulty of the transit of the child through the lower outlet.

Although the anterior part of the bony pelvis is completed by the ossa pubis and ischium, yet in the centre of each side a considerable space is left, called the *obturator foramen*, which is nearly closed by the obturator ligament. The object attained by this arrangement is lightness of structure where strength is not needed. The shape of these foramina is oval in the male and triangular in the female, and this affords an additional distinction between the male and female skeleton. The os pubis is identified with the ilium and ischium in the acetabulum, with the ascending ramus of the ischium, and is connected with its fellow opposite by cartilage at the symphysis pubis.

The **SACRUM** (fig. 3) terminates the vertebral column, and may be said to consist of several vertebrae, which in adult life form but one bone. It is of a triangular shape, the base of the triangle being above, and inclining forwards; the apex below, and somewhat backwards. Its length is from four to four and a-half inches, its breadth four inches, and its greatest thickness two and a-half inches. Its specific gravity is small, owing to its spongy texture, so that for its size it is probably the lightest bone in the body. Its *external*

surface is rough and convex, exhibiting four or five *spinous processes* like those of the vertebræ, but smaller, and diminishing in size as they descend. Anterior to

Fig. 3.



these we find a continuation of the *spinal canal*; with four holes on each side communicating with it, for the transmission of nerves. Its *internal* surface is smooth and concave to the amount of half an inch, crossed by four transverse lines, marking the former division of its bones by cartilage; here are also four pairs of holes sloping outwards, through which pass nervous filaments, which afterwards form part of the great sciatic nerve. The upper edge of this bone completes the brim of the pelvis; the oval shape of which, however, is broken by the projection of the central portion,—the *promontory of the sacrum*. The lateral *surfaces* are rough, uneven, and covered with a thin layer of cartilage; the irregularities correspond to similar ones in the ilium, and with them form the *sacro-iliac synchondroses*. This is probably the most important bone in the pelvis, obstetrically considered, inasmuch as it forms a great portion of the brim and cavity, and enters largely into the various deformities of the pelvis.

It is connected superiorly with the last lumbar vertebra, laterally with the ossa ilia, inferiorly with the os coccygis, and by ligaments with the ossa ischia.

The Os Coccygis, or *huckle-bone*, is the continuation and termination of the os sacrum and vertebral column. It is formed by four or five points of ossification in the foetus, which do not afterwards unite, but are tipped with cartilage, and moveable by a hinge joint. The entire bones form a pyramid, the apex of which is below. The *external* surface is irregular, and the *internal* smooth, terminating the plane of the sacrum, and extending it anteriorly. The small sciatic ligament and the ischio-coccygeal muscle are inserted into it.

In midwifery practice this apparently insignificant bone, is of importance, as any deviation from its normal direction or usual mobility, may influence the progress of parturition.

CHAPTER III.

OF THE JOINTS OF THE PELVIS.

BEFORE proceeding to the consideration of the pelvis collectively, let us briefly examine the joints by which the separate bones are connected, and especially as deficient information on this subject has heretofore led to erroneous practical conclusion. We shall notice, 1, the sacro-iliac synchondroses ; 2, the symphysis pubis ; and 3, the sacro-coccygeal joint.

The SACRO-ILIAC SYNCHONDROSIS, of either side, consists of a rough irregular surface on the posterior part of the ilium and the side of the sacrum, each of which is covered with a layer of cartilage, from one-sixth to one-eighth of an inch in thickness. At the point of junction of these two layers, their substance is somewhat softer, which has led to the erroneous supposition that it is a joint properly so called. This union of the bones is strengthened by strong ligamentous bands, which stretch across from one bone to the other in front and behind, rendering the joint perfectly

immoveable, unless great force be used. Additional strength also, is obtained by the sacro-sciatic ligaments connecting the lower part of the sacrum with the ilium.

The mode in which the sacrum is inserted between the ossa ilia is worthy of notice; it resembles the position of the keystone of an arch *inverted*—*i.e.*, its transverse diameter is greater *inside* than *outside*, because the pressure which it has to resist is from within. The interposition of cartilage is probably for the purpose of diminishing the effect of shocks, and so preserving the integrity of the union.

The SYMPHYSIS PUBIS is situated anteriorly, and formed by the junction of the two pubic bones, whose extremities are covered by cartilage or fibro-cartilage. Occupying two-thirds of the length, and the posterior third of the centre of this junction, we find a true articulation, six lines in length and two in breadth, in shape like an almond, lined by synovial membrane, and containing a small quantity of synovia.

Though the joint be weak in itself, it is strongly fortified by ligaments. Some writers have concluded that the ossa pubis are separated to a certain extent during labour, and that this joint is a special provision for increasing the antero-posterior diameter of the brim of the pelvis. On the other hand this separation is denied by the majority of authorities who have sought for it in vain in cases where no violence has been used; and, from a fair examination of the observations on record, we may conclude that it never takes place as a natural process, but that we occasionally meet with it as an accident.

The SACRO-COCCYGEAL joint is of the kind called ginglymoid, or hinge-like, admitting of extensive motion, especially backwards, so as to permit the enlargement of the lower outlet, in its antero-posterior diameter, at least one inch. The articulating surfaces are covered with cartilage, and between them is a synovial capsule; whilst on the outside, and entirely embracing the joint, is a fibrous capsular ligament.

The *sacro-coccygeal joint* may become ankylosed, and so offer a decided impediment to the dilatation of the lower outlet during labour, as we shall see by-and-by.

CHAPTER IV.

OF THE PELVIS COLLECTIVELY.

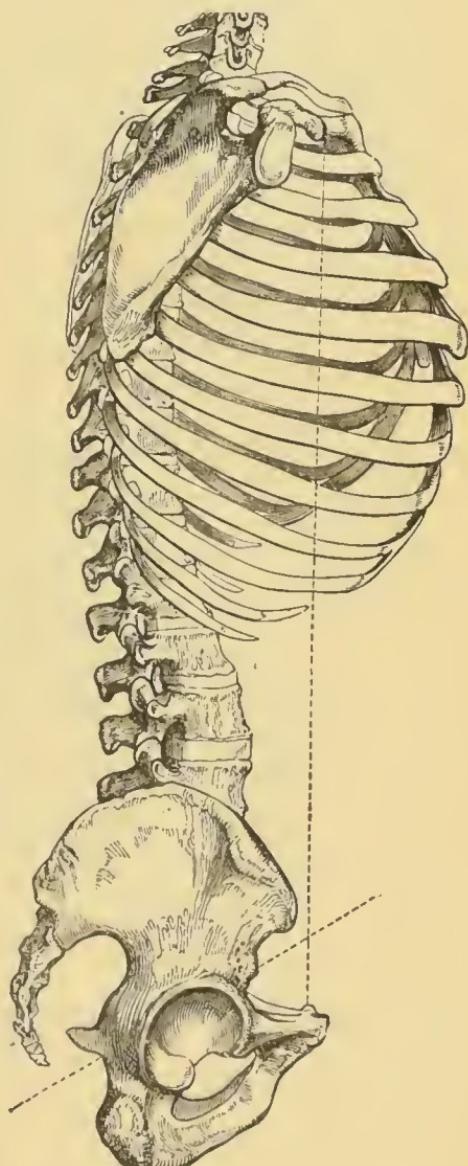
HAVING thus examined each bone of the pelvis separately, and the joints by which they are united, our next object is, the consideration of the pelvis as a whole, in relation to the rest of the body, its magnitude, axes, etc.

It is connected with the trunk by the articulation of the sacrum with the last lumbar vertebra, effected in the same manner as the junction of the vertebræ with each other; with the lower extremities, it is connected by means of the hip-joints.

But the *position* of the pelvis *in situ* is very different from what we might suppose from examining it separately. The brim of the pelvis is neither horizontal nor perpendicular, but oblique, or looking very decidedly forward.

The advantages of this obliquity are obvious, and

Fig. 4.

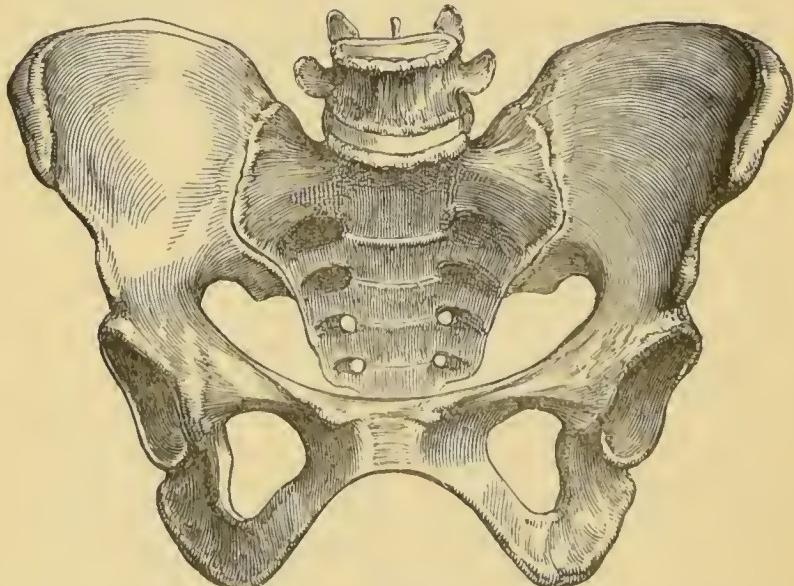


will be more apparent when we consider the position of the uterus. As Dr. Ramsbotham long since observed: "Were the axes of the trunk and pelvic entrance in the same line, owing to the upright position of the human female, the womb, towards the close of gestation, would gravitate low into the pelvis, and produce most injurious pressure on the contained viscera; while in the early months not only would the same distressful inconvenience be occasioned, but there would be great danger of its protruding externally, and appearing as a tumour between the thighs, covered by the inverted vagina."*

We may add, that, when not pregnant, the patient would be liable to prolapse of the uterus and the other pelvic viscera, upon making very slight expulsive efforts.

Now let us examine the PELVIS itself. It is divided

Fig. 5.

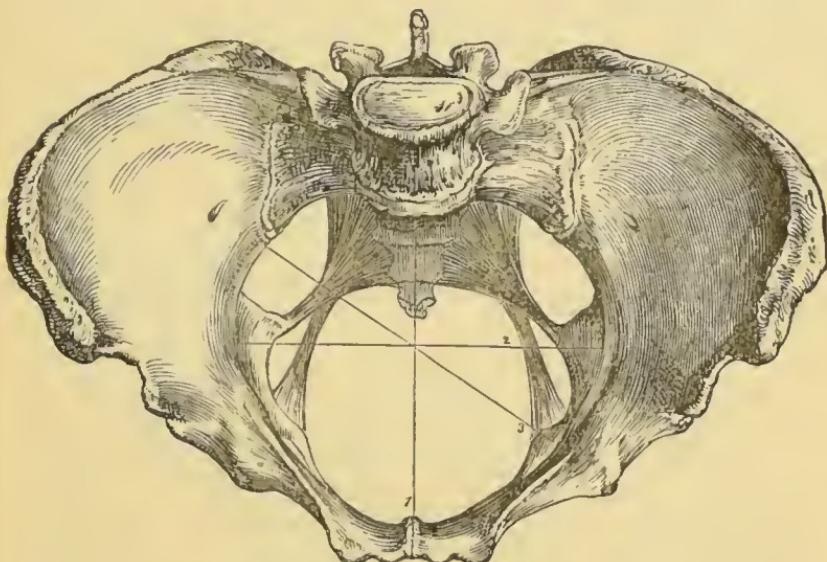


by the ilio-pectineal line into the false and true, or upper and lower pelvis. The *Upper or False Pelvis* is formed by the lateral divergence of the wings of the

* *Obstetric Med. and Surgery*, p. 12., 2nd Ed.

ossa innominata. It is not of much importance obstetrically, except for the general relation which its normal size bears to that of the true pelvis, and the inference to be drawn therefrom as to the normal or abnormal condition of the latter.

Fig. 6.



The LOWER or TRUE PELVIS is the part involved in parturition, and which therefore ought to be known with great accuracy. For the purpose of description, it is divided into the brim, cavity, and outlet.

The BRIM OF THE PELVIS is defined by the ilio-pectineal line; it is of an oval form, except posteriorly, where the oval is broken by the promontory of the sacrum. Its influence upon labour will be understood, when we recollect that it is the first solid resistance with which the head of the foetus meets: that any diminution in its size is more hazardous and less remediable than in any other part of the passages; and lastly, that deviations from normal proportions of the brim most frequently entail similar ones in the cavity.

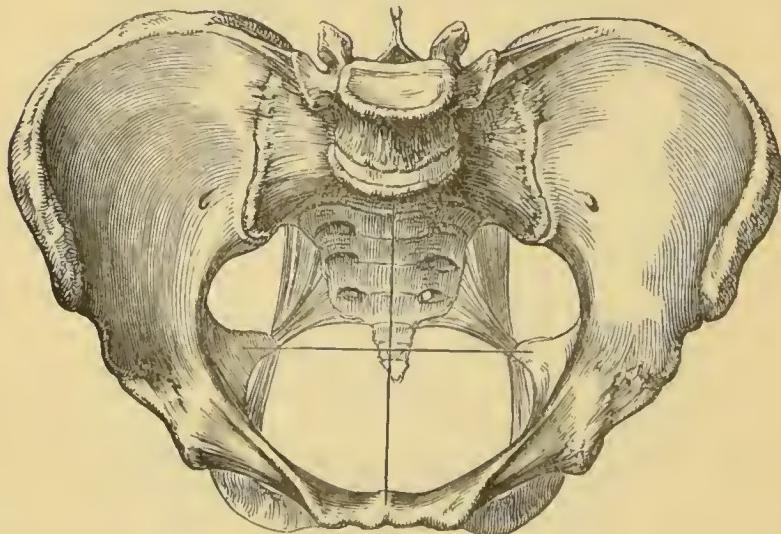
The three principal *diameters* are, the *antero-posterior* (fig. 6)¹ from the prominence of the sacrum to the inner and upper edge of the symphysis pubis, four inches;

the *transverse*⁽²⁾ across the widest part of the brim, at right angles to the antero-posterior, five inches ; and the *oblique* diameter⁽³⁾ from the sacro-iliac synchondrosis of one side, to the opposite side of the brim, just above the acetabulum, five and a-quarter inches, whilst the circumference varies from thirteen to fourteen and a-half inches.

The CAVITY OF THE PELVIS, whose fixed boundaries are the sacrum, the ischium, and the pubis, is of unequal depth. Posteriorly it measures five inches, or six if the coccyx be extended ; from the brim to the tuberosity of the ischium, three inches and three quarters ; and the depth of the symphysis pubis is from two to two and a-half inches.

The *antero-posterior* diameter from the hollow of the

Fig. 7.



sacrum to the symphysis pubis, is about four inches and a-half, the transverse at right angles with the former is about four inches and three quarters ; and the *oblique* about five inches ; a variation of a quarter of an inch either way being allowed.

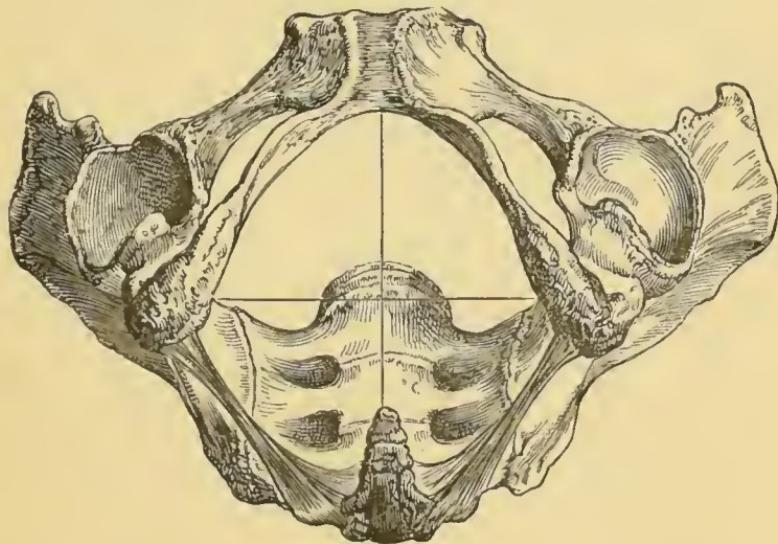
The bones which constitute the pelvic cavity are smooth on their inner surface, and present a series of *inclined planes*, calculated to influence the direction of

the foetal head in its descent. They tend at first downwards and slightly backwards, then downwards and forwards.

The OUTLET OF THE PELVIS is of an oval shape, but irregular. Its lateral boundaries are immovable; but its antero-posterior diameter may be extended, owing to the mobility of the coccyx.

The *antero-posterior diameter* of the outlet, from the

Fig. 8.



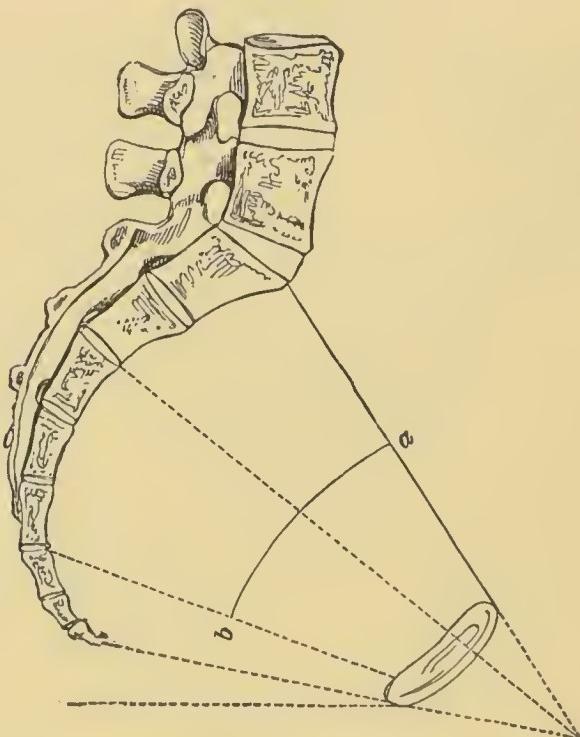
arch of the pubis to the point of the coccyx, is from four to five inches; the *transverse*, from one tuber ischii to the other, is about four inches; and the *oblique*, four inches and three quarters, allowing for a variation of half an inch.

Now, if we compare the diameters of the brim with those of the outlet, we find that the proportions are completely changed; that which was the shortest at the brim, being the longest at the outlet, and the longest diameter of the brim, being the shortest at the outlet. This remarkable change is, however, effected gradually; for in the cavity we observe merely an approximation in the diameters. The effects of these changes upon the mechanism of parturition are very important, as we shall see by-and-by.

The *axes* of the upper and lower outlet of the pelvis form an obtuse angle with each other; the *former* being described by a line running from the coccyx upward to a little above the umbilicus, and the *latter* by a line drawn from the second bone of the sacrum through the centre of the pubic arch.

If we combine these together with the *inclination* of the pelvis, we shall obtain a tolerably accurate notion of the *direction* of the canal of the pelvis. This is marked out by the central line in the accompanying figure.

Fig. 9.



There is a considerable *difference* between the *male* and *female pelvis*, both in shape and size. In the former, the brim is more circular, and the cavity deeper. In the male, the depth of the symphysis pubis is nearly double that of the female; the sacrum is more perpendicular; the sacro-sciatic notches and foramina smaller; the arch of the pubis is narrower, the tubera ischii are nearer to each other, and the coccyx less moveable. Moreover the curve of the lumbar vertebrae is greater

in the female, so as to increase the obliquity of the pelvis, especially in the upright position. The same obliquity is preserved in the sitting posture by the greater size of the buttocks in the female.

From the greater width of the female pelvis, the hip joints are further apart than in the male, although the thigh bones approach each other in their descent, and the knees (in the erect position) are nearly in contact, giving a peculiarity to the movements of the female not observable in the other sex.

So far, we have considered the skeleton pelvis only; but the subject would be incomplete without a brief notice of the soft parts lining the pelvis, and covering it externally. The former modify the diameters of the pelvis, and the latter must be taken into account in forming a diagnosis in the living subject.

The iliac fossæ or hollow of the haunch bones are occupied by two muscles, these pass over the anterior part of the brim, to their insertions. Near the inner margin of the psoas muscle we find the iliac artery and vein, with the crural nerves and lymphatics. In the cavity we find other muscles, with the haemorrhoidal and sacral vessels, and the sacral nerves. The rectum passes down nearly in the centre of the sacrum, and the bladder lies behind and above the symphysis pubis. These parts are held in position by cellular membrane, superficial and deep fascia, etc.

The lower outlet is nearly closed by soft parts, which are capable of great distension. On either side of the sacrum and coccyx are situated the sacro-sciatic ligament, the coccygeus muscle, and layers of fascia and cellular substance; whilst the termination of the rectum, and the perineum, consisting of transverse muscular fibres, fascia and cellular tissue, close the outlet posterior to the orifice of the vagina.

The effect of these additions, in diminishing the internal measurements of the pelvis, is not very great, except at the lower outlet. The transverse diameter of the brim is diminished about half an inch, or rather

more when the psoæ muscles are in action, and the conjugate diameter about a quarter of an inch. The diameters of the cavity are not lessened more than a quarter of an inch. The lower outlet may be said to be almost closed in the absence of any distending force, the orifice of the vagina being the only vacancy; but the elasticity of the perinæum, etc., occasions the soft parts to be little or no permanent diminution of the antero-posterior diameter.

The *external measurements* of the pelvis are of considerable importance in recognition of deformity, as deviations externally appreciable will, in most cases, though not in all, be found to accompany internal ones.

The external antero-posterior diameter of the pelvis, is from seven to eight inches.

The external transverse, between the crest of the haunch bones, of each side thirteen to sixteen inches.

From the anterior superior spine of one side to the other, ten to twelve inches.

From the great trochanter of one side to the sacroiliac synchondrosis of the other, nine inches.

The depth of the pelvis, from the top of the sacrum to the coccyx, from four to five inches.

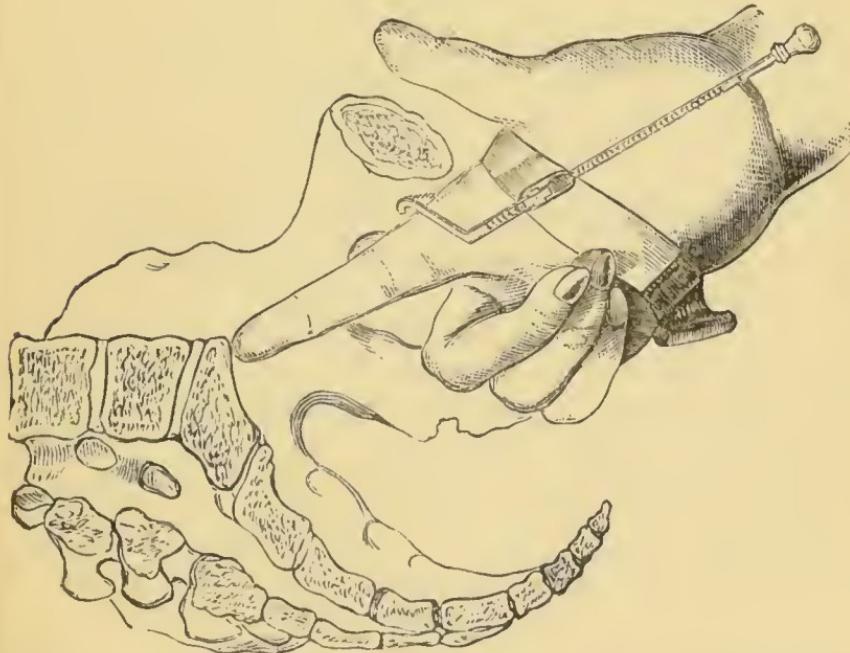
In order from these measurements to form a sufficiently correct estimate of the internal diameters of the pelvis, we must deduct from them the thickness of the soft parts or walls; *i.e.* about three inches antero-posteriorly, and four inches laterally, the depth is easily ascertained externally, posteriorly, by taking the length of the sacrum; laterally by measuring from the anterior superior spine of the ilium, and dividing by two; and anteriorly, by taking the depth of the symphysis pubis.

The next point relates to the practical application of these facts, or, in other words, to the best mode of ascertaining the size of the pelvis in the living subject. A certain amount of information may be obtained from the general and equable contour of the pelvis, the breadth of the hips as compared with the shoulders, the degree of obliquity of the pelvis, the curve of the sacrum, etc.,

and in many cases we may pronounce, from a cursory glance, that the patient is well or ill made.

There is greater difficulty in ascertaining the magnitude of the pelvis internally. Concerning the latter, the midwife may be guided by the information afforded by the "*toucher*;" and undoubtedly, by this means alone, a well educated finger may obtain a sufficiently accurate estimate for practical purposes. When making an examination for this purpose, the finger should be passed direct to the promontory of the sacrum, and thence carried forward slowly to the symphysis pubis; we may then pass it across the pelvis, in the direction of the transverse and oblique diameters, and finally follow the course of the brim, taking note of any deviation from the usual form, or of any obstacle. The state of the sacrum and cavity generally, and the mobility of the coccyx, can readily be ascertained by the finger, as well as the dimensions

Fig. 10.



of the lower outlet. Although deficient in precision, the information thus obtained may satisfy us of the

passage of the child ; and of course, if the patient be pregnant, and still better if she be in labour, there will be more certainty, as we shall then have the child's head as a standard of comparison.

But, in order to arrive at a greater accuracy, certain instruments have been invented, such as that of Dr. Greehalgh (fig. 10), for measuring the internal as well as the external diameters of the pelvis ; but we do not think it necessary to enter into any description of these instruments, as their employment is beyond the province of either a nurse or midwife.

CHAPTER V.

OF THE EXTERNAL ORGANS OF GENERATION.

WE may now proceed to describe the generative organs in the female. These are ordinarily divided into the *external* and *internal*. The external consist of the mons veneris, the labia majora, and minora, the clitoris, hymen, and vagina. The internal or formative, consist of the ovaries, fallopian tubes and uterus. In the present chapter we shall confine our remarks to those parts with which the midwife is chiefly concerned.

The LABIA, are two folds of skin externally, and mucous membrane internally, continuing downwards from the sides of the mons veneris to the fourchette. Their junction superiorly constitutes the anterior commissure of the vulva, and they enclose the external organs of generation. Their breadth and thickness are greater superiorly, gradually decreasing until they disappear near the fourchette. Superiorly they are in contact, but they are separated posteriorly. The external labia contain, between the skin and mucous membrane, subcutaneous fascia, fat and cellular tissue, nerves and blood vessels, and the vulvo-vaginal and

other glands. Externally, the labia are thinly covered with hair, and thickly studded with sebaceous follicles.

Their *use* is to protect the sensitive organs contained between them, and at the time of labour to facilitate the distension of the external orifice.

The **NYMPHÆ**, are two lateral folds of mucous membrane, internal to the labia majora, with which they are in contact externally, and by which they are generally covered in the adult. They extend from the anterior superior portion of the vulva to about the middle of the orifice of the vagina, and contain between their mucous coats a spongy vascular tissue and nerves. They enfold the clitoris, the meatus urinarius, and cover part of the vaginal orifice. In young persons they are firm and elastic, but in old age they become flabby and loose.

They doubtless contribute, with the labia, to maintain the integrity and sensibility of the parts they cover.

Between the nymphæ there is a smooth triangular space,—the **VESTIBULUM**,—at the lower part of which we find the **ORIFICE OF THE URETHRA**, or the **MEATUS URINARIUS**, just at the upper edge of the orifice of the vagina. The exact situation of this opening is important, because we are frequently called upon to introduce the catheter, and in ordinary cases it should be done without exposure. The operation is not difficult; the patient being placed on her back, and the labia being separated, the point of the forefinger of the left hand should be placed just within the orifice of the vagina, so as to press lightly its upper edge; the catheter should then be passed along the inner surface of the finger, until it reaches the vestibulum, near the edge of the vaginal opening; when there, a very slight movement will cause it to enter the meatus. Or, and much preferably, the patient may be placed on her left side, in the ordinary position for labour, and the finger carried from behind forward to the vestibulum; the catheter should then be passed along the finger in the direction of the axis of the outlet, when a

slight movement will detect the orifice. The operation is more difficult when the parts are swollen or distorted, as happens occasionally from disease, during pregnancy or labour, and after delivery. In such cases if we cannot detect the orifice by the touch, we must of course use a light ; and then, for obvious reasons, it is better that the patient should be placed on her side.

The orifice is round, though its sides are usually in contact, and its edges are somewhat thickened.

The URETHRA is a membranous canal about an inch and a-half in length, dilatable, and directed obliquely from before backwards, and from below upwards running under and behind the symphysis pubis, from which it is separated by loose cellular tissue. Internally it opens into the bladder. Its direction is subject to variation. During pregnancy, the bladder being carried upwards with the uterus, the elongated urethra curves under the pubic arch, and then ascends perpendicularly. The same change occurs when the uterus is enlarged from other causes. In prolapse of the pelvic viscera its course is reversed. These changes should be borne in mind when catheterism is required.

Immediately below the orifice of the urethra we find a much larger opening, of about an inch in diameter—the ORIFICE OF THE VAGINA. Ordinarily its sides are in contact laterally, but it is capable of enormous distension, and of again returning to its natural size. The opening is closed inferiorly in infants, by a fold of mucous membrane of a crescentic shape, the concavity looking upwards, and which is called the HYMEN. This membrane is easily destroyed, or it may become so relaxed as scarcely to be perceptible.

The parts contained within the vulva are abundantly supplied with nerves, owing to which, and to the extreme delicacy of their texture, they possess great sensibility. This explains the severe pain which accompanies even trifling diseases of these parts ; and it is merely a repetition of the fact observed in other mucous membranes—viz., that they acquire their high-

est degrees of sensibility near their junction with the skin.

The FOURCHETTE is the inner edge of the posterior commissure of the vulva, and the anterior border of the perineum, between which is a space called the fossa navicularia; it is formed by the union posteriorly of the labia. It consists of a fold of mucous membrane, meeting externally the skin of the perineum, and is frequently, perhaps generally, torn slightly in first labours.

The PERINEUM is the name given to the space between the posterior commissure and the anus. It is of a somewhat triangular shape, and its medium length, in women who have not borne children, is from one to two inches. It is shorter, of course, in those who have had children. In the centre a prominent line may be observed, running antero-posteriorly, called the "*raphe*." The perineum is composed of various tissues; externally there is the skin, then fat, cellular tissue, fascia, and muscles, besides which, it contains the superficial and transverse arteries, veins, nerves, and lymphatics.

The use of the perineum is obvious: it closes the lower outlet posteriorly, so as to prevent prolapse of the pelvic viscera; whilst it admits of distension when necessary, and by its elasticity, speedily resumes its former condition.

The perineum is sometimes unusually long, increasing the risk of its laceration during labour; or it may be very short, and so afford inadequate support to the superimposed viscera. It may be torn in various ways during labour, as we shall see hereafter, and either not unite or present the cicatrices of former lacerations.

The VAGINA is a musculo-membranous canal, extending from its orifice in the vulva obliquely through the cavity of the pelvis to the uterus. It passes upwards from the vulva behind and below the urethra and bladder, between the ureters, and anterior to the rectum, describing nearly the line of the canal of the pelvis. Its form is cylindrical, somewhat flattened superiorly,

but, when quiescent, its sides are always in contact, so that from birth until puberty there is no reason to suppose that they are ever separated, and afterwards only by external or internal forces. The junction is of their anterior and posterior surfaces never laterally, and we shall see that by this arrangement not only is the uterus protected from external influences, but is efficiently aided in preserving its position. Its dimensions vary according to age, and other circumstances; for instance, it is proportionately longer and narrower in virgins than in those that have borne children. Ordinarily it is about six inches in length, by one in width.

The proper tissue of the vagina is dense, and of a grey pearly colour, resembling in some degree fibrous tissue, about a line and a-half in thickness anteriorly, though less near the womb. It is well supplied with vessels, which are multiplied and interlaced towards its anterior extremity. Internally the vagina is lined by mucous membrane of a pale pink colour, continued from the vulva, and which, near the orifice, and there only, possesses great sensibility, except when it is the seat of inflammation, and then the whole canal is very tender. The mucous coat is disposed in the form of transverse folds anteriorly and posteriorly, which, by unfolding, permit the distension of the vagina.

From the closed upper extremity of the vagina, the mucous membrane is reflected down upon the projecting wall of the womb. In addition to its proper tissue and mucous coat, the vagina has some muscular fibres contracting its orifice. The vagina, in common with the vulva, is abundantly supplied with blood vessels and with nervous filaments, as well as with lymphatics. This canal being the passage for the transmission of the foetus, to facilitate this process the inner membrane, which in its ordinary state secretes just enough mucus to lubricate its surface, during labour secretes it most profusely.

The vagina varies much in length, as already stated:

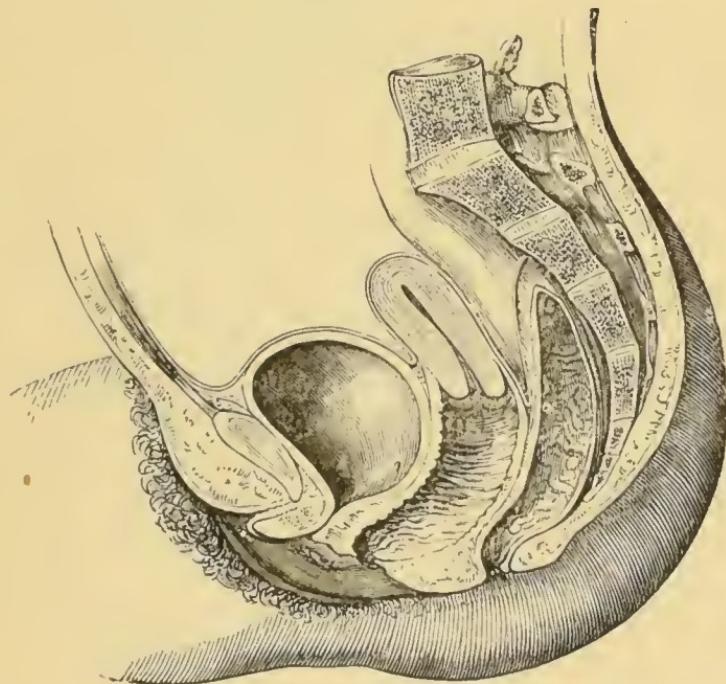
its width differs equally in different subjects; its exit may be closed by the hymen, or by a membrane higher up; its sides may be adherent, or the seat of cicatrices, or may be affected by tumours as well as by malignant or other disease, or it may be altogether wanting.

CHAPTER VI.

OF THE INTERNAL ORGANS OF GENERATION.

OUR next subject is *the internal* organs of generation. But before we proceed to take them in detail, it will not be unprofitable to direct your attention to the relative situation of the pelvic viscera, as shown in the next woodcut.

Fig. 11.



Proceeding from before, backwards, we find the urethra running in an oblique direction, antero-posteriorly, and from below, upwards, under the arch of the pubis,

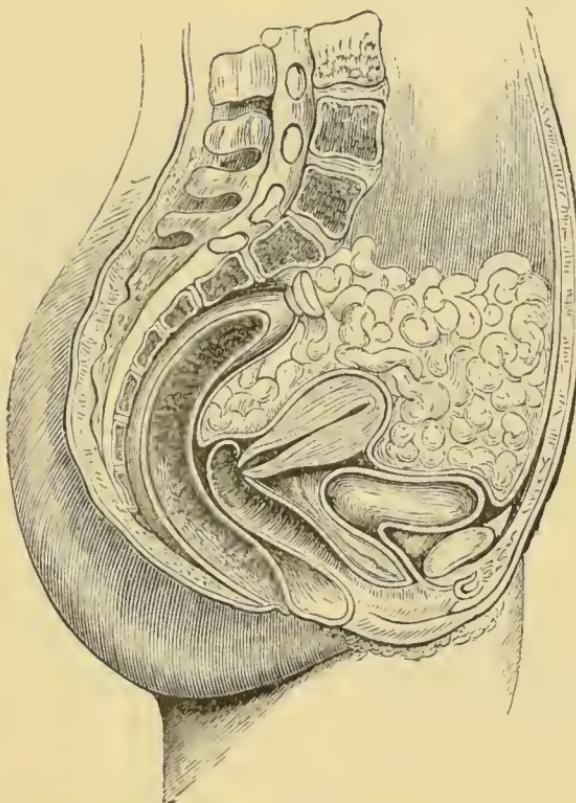
and then merging in the bladder, which, when distended, rises about half its height above the symphysis pubis. Below the urethra, but with an interval between them, is the vagina, running its oblique course to the os uteri, which is a little above the level of the pubes. The position of the uterus is not vertical, but inclining a little forward, with its fundus above the level of the bladder. The lining membrane of the abdominal cavity, or peritoneum, is reflected on the fundus and posterior wall of the bladder down to the commencement of the cervix uteri; from whence it passes over the anterior surface, fundus, and posterior surface of the uterus, and on to the posterior wall of the vagina, down to about an inch below the level of the os uteri, from whence it is reflected upon the rectum. The latter organ lies between the uterus and the sacrum, and a little to the left side of the uterus.

But such a figure as the preceding gives an incorrect notion of the position and relations of the different organs in the living subject. The following (fig. 12) is probably nearer the truth.

Let us remark: 1. The curve of the lumbar vertebræ, throwing back the sacrum, and bringing the anterior surface of the symphysis pubis nearly horizontal. 2. The axis of the uterus in accordance with the axis of the upper strait, and at something like a right angle with the axis of the vagina. 3. That the vagina would be more accurately represented by a close double line, inasmuch as its anterior and posterior surfaces are always in contact. 4. Lastly, that these two last circumstances must exercise more influence in supporting the uterus and preventing its descent than has been supposed by some writers. Direct downward pressure would drive the cervix, not along the vaginal curve, but down to the coccyx. For the production of prolapse, the direction of the axis of the uterus must first be changed.

We may now pass on to the description of the uterus, fallopian tubes, and ovaries.

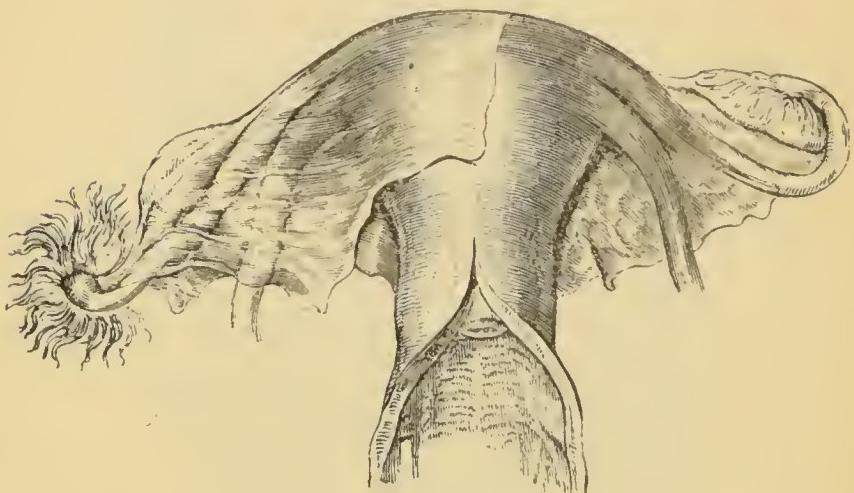
Fig. 12.



The UTERUS is the receptacle provided for the nutrition, maturation, and, ultimately, for the expulsion of the foetus. It is largest of the generative organs, and is a hollow symmetrical organ, in shape somewhat triangular or pyramidal, resembling a flattened pear, but rounder posteriorly than anteriorly; situated, as we have just seen, in the centre of the pelvis, behind the bladder, above the vagina, below the small intestines, and in front of the rectum. For the convenience of description, anatomists ordinarily divide it into the *fundus*, or that part above a line drawn from the orifice of one fallopian tube to the other; the *cervix*, or the narrow and inferior part; and the *body*, or that part between the fundus and cervix. The latter or neck of the womb in its general structure is more dense, less vascular, and the menses are not excreted by this part.

In the unimpregnated state it projects into the vagina about half or three quarters of an inch, the anterior lip being the lower.

Fig. 13.



The adult healthy uterus may vary a little in size, but the following measurements are sufficiently accurate. The length of the uterus, from the margin of the lip to the fundus, is two inches and three quarters ; breadth between the insertion of the fallopian tubes, from two inches and three-eighths to two inches and five-eighths ; the middle of the fundus rises a quarter of an inch above a line drawn from the insertion of one tube to that of the other ; the commencement of the body is an inch and a-quarter broad, its thickness is an inch. The length of the cervix is one inch ; the thickness of that part of the cervix which projects into the vagina, is an inch and one-eighth ; its breadth an inch and a-quarter. The length of the transverse chink, or os uteri, from three-eighths to half an inch ; each lip is three-eighths of an inch thick, though the posterior is said to be the thinnest.

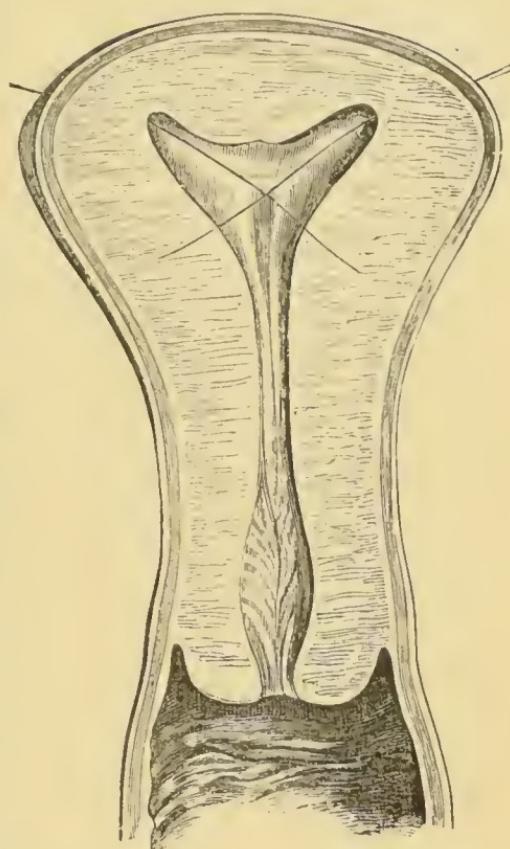
The Os UTERI or mouth of the womb is situated at the lower part of the cervix, varying in form in different individuals. In virgins, or women who have not borne children, it is generally a circular orifice ; after

child-bearing it is sometimes a triangular opening like a leech-bite, in other cases a transverse chink or slit, and often is the seat of extensive laeeration during parturition. It is generally about the calibre of a goose-quill, or rather less.

The *Canal of the Cervix* is from a half to three-quarters of an inch long, leading from the *os uteri*; it first widens and then contracts again when it enters the cavity of the uterus, marking the *os uteri internum*, as it has been called. Between the *os uteri externum* and *internum* the mucous membrane is curiously disposed in folds, branching out from a central line; this has been called the *arbor rite*. The internal surfaces of this canal is thickly studded with mucous follicles, called *glandulae Nabothi*, which, after impregnation, secrete a thick mucus that blocks up the canal. The cavity of the uterus is of a triangular shape, the base being upwards; its dimensions have already been given.

Much difference of opinion has existed, and many discussions have taken place, as to the structures which compose the uterus; these however, it will here suffice to say, may be divided into three layers, viz: (1) the *External or Peritoneal Coat* by which the uterus is covered posteriorly and anteriorly and which is reflected laterally to the sides of the pelvis, near the sacro-iliac synchondroses, forming the *broad ligaments*

Fig. 14.



of the uterus, on each side, containing the fallopian tubes, ovaries, and round ligaments. From their attachment to the pelvis they necessarily afford some support to the uterus, at least before conception. This serous covering is identical with the lining of the abdomen. (2) the *Middle Coat of the Uterus* belong to the class of non-striated or involuntary muscles. This differs in colour from ordinary muscle, being yellowish, with a faint tinge of red, like the middle coat of arteries. It consists of fibrous structure, though it is not easy to trace the course of the fibres in the unimpregnated womb ; however, when the uterus is enlarged from impregnation or other causes, it can readily be done, and they may be divided into several sets. The superficial set are very irregular, interlacing with each other in every direction, though with a general tendency from the fundus towards the cervix ; but some regularity is observable in the deeper sets ; for instance, there is a circular arrangement around the orifice of each fallopian tube, and at the os uteri ; a layer diverging from the middle line anteriorly and posteriorly, and perpendicular bands descending to the os uteri. Among these more regular layers there are irregular fibres interspersed. From the middle coat fibres are sent off to the fallopian tubes and round ligaments. (3) The *Mucous Coat*.—The uterus is lined by a membrane, about the character and function of which there is much controversy, but which it will suffice you to consider as being continued from the mucous membrane of the vagina after it covers the cervix uteri. This mucous membrane consists of epithelium, basement membrane, fibrous tissue, blood vessels, and nerves, like other mucous membranes, but distinguished by various special peculiarities of structure which need not be referred to in an elementary work of this kind.

The *Arteries* of the uterus are four in number. The two superior—the spermatic—arise from the aorta or emulgent arteries, and descend along the sides of the womb in a serpentine course ; they are distributed to

the upper part of the uterus, to the fallopian tubes and ovaries. The two inferior—the uterine arteries—given off by the hypogastric arteries, run along the sides of the uterus, to within a short distance of the lips, then divide, and supply the cervix and upper part of the vagina. The spermatic and uterine arteries anastomose or join freely with each other.

The *Veins* are more numerous than the arteries, are capable of greater distension, and lie superior to their corresponding arterial branches. They possess no valves, and, like the arteries, are of small size so long as the genital system is quiescent, but increase very greatly during pregnancy, when they form what have been called the uterine sinuses.

Some uncertainty has existed as to the *Nerves* of the uterus, concerning which, it would be needless to occupy your attention beyond stating the fact that this organ is abundantly supplied by both spinal and sympathetic nerves, as well as with numerous lymphatic vessels, into any description of which it is unnecessary for our present purpose to enter here.

The lower portion of the uterus is within the reach of a vaginal examination, so that we can estimate its size,

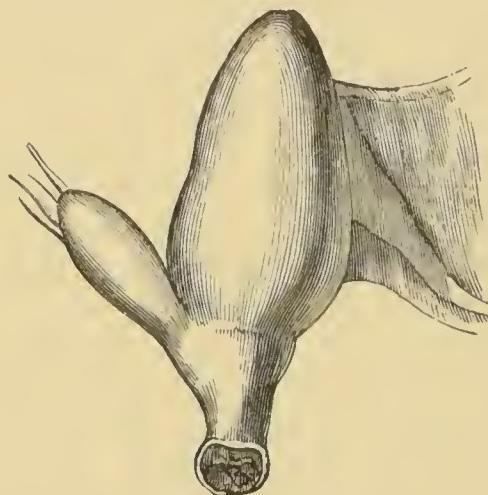
Fig. 15.



temperature, integrity, mobility, sensibility, etc. Further information as to its condition may be obtained in many cases by abdominal manipulation. *Abnormal*

deviations.—1. The uterus may be altogether wanting.
 2. The canal of the cervix may be extremely narrow throughout, or it may be the seat of stricture. 3. It may be closed, either by the union of its sides, or by the mucous membrane being continued over the os uteri. 4. It may be double, or consisting of two distinct cavities opening by one or by two orifices into the vagina (fig. 16).

Fig. 16.



The FALLOPIAN TUBES are two cylindrical canals, about four inches long, proceeding from the upper angles of the uterus. They are contained in the superior and lateral folds of the broad ligaments. Internally, they open obliquely into the uterus, at which point the canal is narrow; it afterwards expands, and then again contracts towards its external termination, where it is open to the abdomen. Externally, the tubes are of equal thickness for about three inches and a-half, when they expand, and terminate in a fringed process, called the *imbriæ*, which is applied to the ovary during ovulation and impregnation. The tubes are covered externally by the peritoneum, beneath which is their proper tissue, with some circular and longitudinal fibres, derived from the middle coat of the uterus. Internally they are lined by mucous membrane, disposed in longi-

tudinal folds, the villi of which are highly developed after impregnation. The tubes share in the vessels and nerves by whieh the ovaries are supplied.

Their *function* is the transmission of the ovum to the uterus ; in fact, they are the excretory ducts of the ovaries, and also play an important part in the process of menstruation.

Abnormal deviations.—The tubes, one or both, may be impervious, from disease, or as a eongenital malformation. The closure of both of course entails sterility. They are also subjeet to inflammation or salpingitis and its eonsequences, hyo and pyo-salpinx, as well as to malignant and other diseases.

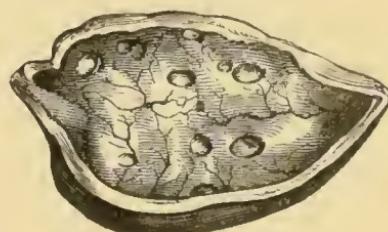
The OVARIES are the essential organs of generation in the female. They are situated on each side of the uterus, to whieh they are attaehed by the posterior duplieature of the broad ligaments.

They are small oval flattened bodies, broader at the end distant from the womb ; about an ineh and a-quarter or an ineh and a-half long, from half to five-eighths of an ineh at their greatest breadth, and a quarter of an ineh thick. They hang loosely in the pelvis, beneath and somewhat behind the fimbriated extremity of the fallopian tubes. Smooth externally in virgins, they become wrinkled in old age.

Their external covering is the serous membrane, constituting the broad ligament, in which they are completely enveloped, except at the part where the vessels enter. Underneath the peritoneum they possess a proper fibrous coat of dense structure, called the *Tunica Albuginea*.

When laid open (fig. 17), we find their internal structure to consist of cellular tissue, permeated by numerous blood vessels derived from the spermatie arteries, running tortuously across the ovaries in nearly parallel

Fig. 17.



lines ; and by nerves. Embedded in the cellular parenchyma of the organ, in the adult, a number of small vesicles may be observed, which were first particularly described by De Graaf, and called after him, *Graafian Vesicles*, to the structure and function of which we need not here refer.

CHAPTER VII.

SIGNS OF PREGNANCY.

FOR obvious reasons it is extremely difficult to fix upon the date of conception in any case; indeed, the best writers are not agreed whether it is more apt to take place immediately before or immediately after menstruation. Probably, therefore, the usual mode of dating it a fortnight after the last menstruation is correct enough for practical purposes ; and if, in addition, you find that quickening occurs four months and a-half or thereabouts afterwards, you will be pretty accurate in fixing the period of delivery at nine calendar or ten lunar months, or forty weeks or two hundred and eighty days from the first date. There is always, of course, a degree of uncertainty, especially with the first child, and therefore it is better for a patient, in making preparations, to calculate the shortest possible time, so as to be ready.

Very soon after conception, certain changes are produced in the system, which give rise to local or general symptoms, which, as they are regular, and not all present from any other causes, are regarded as signs or proofs of pregnancy. Some of these depend upon the report of the patient herself, and you cannot place much reliance upon them if she have a motive for deceiving you: for example, if she, being unmarried, wishes to avoid the suspicion of pregnancy, she may suppress, or give a false account of them; or, on the

other hand, if she wish to prove herself pregnant, she may invent some and exaggerate others. Other signs are independent of the patient's report, and of these we can judge, but then they may, individually, all be produced by other causes, except two; so that whilst on the one hand you are carefully to guard against the patient's deceiving you, you must also take care not to deceive yourself. We shall now enumerate these different signs.

1. The first effect of conception is to stop the monthly discharge (*menstruation*), and, if the patient be married, this immediately excites suspicion, and if confirmed after a time by other signs, it is of great weight. But you must not forget that it may be caused by fright, distress, cold, and many other things, besides actual disease. Sometimes, though rarely, menstruation continues after conception, so that you should hesitate to trust to this sign alone, as otherwise you may make mischief.

2. Within a month or six weeks after the patient has conceived, she finds her stomach sick and uncomfortable, especially in the morning immediately on leaving her bed, from which this sensation has been termed "morning sickness." It is generally only in the morning; and after vomiting, the patient may breakfast and continue well during the day. It lasts about six weeks, or perhaps up to the period of quickening: but varies a good deal; with some it continues all day, with others it occurs only in the evening and night; or it may continue for the whole time of pregnancy, or, lastly, it may be so severe as to threaten life. On the other hand, morning sickness may occur from other causes. You cannot, therefore, trust to this alone, nor even along with the suppression of the courses, although the one certainly strengthens the suspicion excited by the other, especially if the patient be otherwise in good health.

3. About two months after conception a change takes place in the breasts. They enlarge, and have a firm, solid, and knotted feel, and the woman complains of

tingling and stinging pains in them. The nipple becomes more prominent, and with the circle (*areola*) round it, acquires a deeper colour, and the little pimple-like glands upon the areola are more marked. There is frequently, as pregnancy advances, a secretion of milk, or something like it, which escapes from the nipple, and stains the linen. Some of these changes may occur without pregnancy, or may be very slightly marked, although the patient be pregnant. They, therefore, are not proofs of pregnancy, but only additional evidence of its probability. We are, however, inclined to lay great stress upon the knotty, solid, glandular feel, as we have never seen it well marked, except in pregnant women.

4. Somewhere about the middle of the fourth month of pregnancy, the mother "quicken," as it is called, on the supposition that at that moment, the child became alive or "quick." This is simply a popular delusion. The child is alive, in the fullest sense of the term, from the moment of conception, but the mother first perceives its *movements* when she quickens, not because it never moved before, but because she could not feel them, owing to the situation of the uterus. At first, this quickening is like a feeble throbbing or pulse in the lower belly, gradually increasing in strength, until it becomes perceptible on placing the hand, especially if cold, on the abdomen. Now, when this sign really occurs, it is more conclusive than any of the preceding. But, you must remember, that you depend upon the accuracy or veracity of the patient for the information, at an early period; and, moreover, that something so like these movements occasionally occurs as to deceive even the patient herself, as well as the medical man. On the other hand, as quickening sometimes does not occur till the sixth month, the patient may be really pregnant, and yet this sign not be present at the usual time.

5. After the patient has quickened, the tumor formed by the enlarged uterus may soon be perceived

above the pubis, rising gradually out of the pelvis, until at the sixth month it reaches the navel, and by the ninth it fills the whole abdomen. The feel of the enlarged uterus is firm and elastic, very different from the feel of the abdomen distended by flatulence or fluid; but the womb may be enlarged from other causes than pregnancy, and there are other tumors which it is hard to distinguish by their feel alone from the pregnant uterus. However, the appearance of the tumor, shortly after quickening, in addition to the other symptoms already mentioned, completes a body of evidence which under ordinary circumstances might justify you in pronouncing a patient pregnant.

6. So far, then, your judgment must not be decided by any single symptom, or even by two, but by the regular succession and presence of several, coupled with the fact that you can detect no other cause for their production. After the fourth month, it is quite possible to hear the pulsation of the foetal heart by means of the stethoscope. If, therefore, the other signs leave you in doubt, or if the case be one of great importance, or involving a suspicion of criminality, you should be most cautious in avoiding giving any opinion, and should insist on having the patient examined by a competent practitioner, who will either confirm or correct the opinion you may have formed but not expressed.

There are other signs of pregnancy generally enumerated, but they are either of little value or belong rather to the sphere of the medical man than the midwife.

During pregnancy, especially the latter part, patients often suffer from constipation, piles, cramps, swelling of the legs, and varicose veins. For the first, gentle doses of medicine should be given with sufficient frequency; for the second, an appropriate ointment, or a little hazaline, should be used; gentle friction will relieve the third; rest in the horizontal position, with gentle friction, the fourth; and a bandage or elastic stocking, the fifth complaint. Swelling of the hands

and faee from dropsical effusion is occasionally also observed in the latter months, and is then of great importance as a probable forewarning of subsequent puerperal eonvulsions, and therefore requires immediate medical attention.

CHAPTER VIII.

MANAGEMENT OF PREGNANCY.

LET us now say a few words upon the *management* of pregnaney. You are not to regard it as a diseased state, requiring medical treatment neeessarily ; on the contrary, it is a natural eondition, and needs little more than common sense, in the majority of instances, to conduct it to a happy termination. A certain amount, rather less, perhaps, than at another time, of exercise should be taken ; and as the stomach is irritable, or at least more easily disturbed than usual, some eare should be taken to avoid those articles of diet likely to disagree ; longings, as they are ealled, may be, to a eertain extent, gratified, provided they are not forbidden by common sense ; and the dress should be eomfortable, according to the season of the year and the weather. It is hardly neeessary to observe that during pregnaney the personal vanity, whieh seeks gratification in well-fitting elothes, must give way to the neeessity for freedom, looseness, and ease in dress. The stays, for example, should be altered ; the front bone or steel should either be removed or exchanged for one much slighter ; a gore of elastic should be inserted on each side, so as to allow of expansion ; and the breasts should be freed from all possibility of pressure, or better still, the stays should be replaced by a properly fitting abdominal belt, such, for instance, as that suggested by Dr. Duke, or else by the editor's abdominal support. If the patient intend to suckle her child, she should every morning and

evening, for about two months before her confinement, wash the nipples with Vinolia soap and water, dry them, and then bathe them with equal parts of brandy and water, or brandy and strong green tea: this will harden the skin, and diminish the probability of sore nipples. The bowels should be carefully regulated, if necessary, not by large doses of medicine, but by moderate ones repeated. Take care about this, and do not mistake; as an irritable condition of the bowels, with small, frequent motions, is quite consistent with large accumulations, and requires medical advice. Powerful purgatives must never be given to a pregnant woman, for fear of bringing on labor. Small doses of castor oil, or Gregory's powder, or Carlsbad salts, or Cabana water, will answer in most cases.

The spirits of a pregnant woman are very variable; it will, of course, be your duty to promote cheerfulness, by suggesting to her the most happy considerations connected with her condition, and by abstaining from all unpleasant histories, recitals of bad cases, etc. Quiet and cheerfulness, fresh air and exercise, by promoting the healthy performance of the bodily functions generally, will naturally favour the successful completion of pregnancy. But some deviations from the natural course may occur, or symptoms may arise, which may indicate that all is not quite right; and it may be well to caution you against the attempt to treat such yourself. It is not likely that your medical knowledge will be sufficient, and you may lose time at least, which, in some cases, may result in serious consequences. Whenever, therefore, any unusual or threatening symptom occurs, be the first to advise that a medical man be consulted: by so doing, you will promote your own interest, as well as that of the patient.

At the time you are engaged as midwife or nurse-tender in the better class of practice, you will also be generally consulted as to certain preparations for the approaching confinement. In reference to these you should endeavour if possible to secure for this purpose

a large, quiet, airy, well-ventilated, not over-furnished bed-chamber, and above all, one not directly communicating in any way with either bath-room or water-closet. The patient's bedstead should be an iron one, light, roomy, and devoid of hangings or curtains. The mattress should be wire woven or in default of this, a new firm hair mattress may be advised. At the same time you may make timely arrangement for having an abundant supply of hot and cold water at hand when required in the lying-in room, and also more especially if the confinement is to take place in the country you should give the patient a list of whatever may be then needed, such as castor oil, turpentine, vinegar, and whiskey, or some other stimulant. Besides these take care to direct your patient to furnish herself with some earbolized vaseline, thymol soap, a bottle or two of Condy's fluid or sanitas, a few new sponges, and a suitable irrigator, or a syphon syringe. A large square of waterproof cloth, with binders, diapers, and strong pins should of course be provided. See also that the infant's clothes are correct, with strings, instead of pins; and prefer rather an abundance of inner clothing to external finery.

In midwifery practice amongst the poor, obviously you cannot expect all the foregoing elaborate preparations to be provided, and must then only make the best you can of the existing conditions of the lying-in patient, but even under these circumstances you must always bear in mind that dirt and disease generally go hand in hand, the seeds (or specific micro-organisms or septic germs) of the latter lurking in, or being conveyed through the former; and hence, you must always strive to keep even the poorest of your patients as clean or aseptic in her person and surroundings as you possibly can.

CHAPTER IX.

SIGNS OF APPROACHING LABOR.

BEFORE considering the phenomena and management of natural labor, let us turn to the *signs of approaching delivery or labor*, which are various and of unequal value.

1. *Subsidence of the abdomen.* During the last month of pregnancy, but especially during the last fortnight, the abdomen becomes apparently less, and the womb falls downward and rather forward, so that the waist becomes less and the figure more prominent. This is, in some measure, owing to the relaxation of the abdominal walls, and partly to the settling down of the uterus in the pelvis, and is less remarkable in first pregnancies, but very obvious subsequently ; and frequently the tilting forwarding is so great as to require the mechanical support of a belt or binder.

2. *Frequent passing water.* Partly from the pressure of the womb upon the bladder, and partly from the sympathy between these two organs, the patient, during the last month, is unable to retain her urine for any considerable time, and generally has a desire to void it frequently. This symptom also occurs during the fifth month and from the same causes.

3. *Griping, kneading, and diarrhoea.* From similar causes, *i.e.*, from the pressure of the enlarged womb upon the bowel, as well as from sympathetic irritation, there are occasional griping pains, a desire to go to stool, or perhaps purging ; the latter is seldom excessive, though irritating, the quantity passed being generally small. These symptoms rather indicate that the patient is near the end of pregnancy than the actual approach of labor.

4. *Painless contractions of the womb.* When the time of labor approaches, however, the patient observes that the abdomen now and then becomes unusually hard and prominent, with a sensation of squeezing, though

without pain. This is clearly uterine action, and indicates the near approach of labor, whether at the full time or prematurely ; as, if not interfered with, these contractions are repeated until they become painful and so merge into labor pains. If you observe them before the end of pregnancy you should immediately advise medical assistance.

5. *The Shew.* This consists in a discharge of glairy mucus from the vagina, occasionally tinged with blood. It is ordinarily observed only during the day or two preceding labor, and varies a good deal in amount. It is, perhaps, the best sign of the immediate approach of labor, and if, at the same time, the painless contractions be observed, you may be sure that labor is very near, and had better make your arrangements accordingly.

There are other signs popularly believed to indicate the same event, such as swelling of the limbs and external parts, cramps, freedom from oppression, sense of lightness, etc., which may or may not occur at this period.

PART II.

C H A P T E R X.

NATURAL LABOR.

WE shall now describe the process of labour, but before doing so it is necessary to adopt some classification as a sort of index, so to speak, of the subjects upon which we are to treat. Unless in a more scientific work than the present, it is not of much consequence whose classification we adopt; in the Rotundo Hospital, Denman's has long been employed, and it is as follows:—

CLASS I.—NATURAL LABOR.

CLASS II.—DIFFICULT LABOR.

- Order 1, *from deficient or irregular action of the uterus.*
- „ 2, *from rigidity of the soft parts.*
- „ 3, *from disproportion of size between the pelvis and child.*
- „ 4, *from disease of the soft parts.*

CLASS III.—PRETERNATURAL LABORS.

- Order 1, *Presentation of the breech or inferior extremities.*
- „ 2, *Presentation of the shoulder or superior extremities.*

CLASS IV.—ANOMALOUS, OR COMPLEX LABORS.

- Order 1, attended by haemorrhage.
- „ 2, „ by convulsions.
- „ 3, with plurality of children.
- „ 4, Descent of the umbilical cord.
- „ 5, Rupture of the uterus or vagina.

The following classification being preferred by Dr. Churchill may, however, be here adhered to:—

CLASS I.—NATURAL LABOR.

CLASS II.—UNNATURAL LABOR.

- Order 1, Tedious labor.
- „ 2, Powerless labor,
- „ 3, Obstructed labor.
- „ 4, Deformed pelvis.
- „ 5, Malposition and mal-presentations.
- „ 6, Plural births. Monsters.

CLASS III.—COMPLEX LABOR.

- Order 1, Prolapse of the funis or umbilical cord.
- „ 2, Retention of the placenta.
- „ 3, Flooding.
- „ 4, Convulsions.
- „ 5, Lacerations.
- „ 6, Inversion of the uterus.

In this classification the second and third classes of Denman are included under the head of Unnatural Labor.

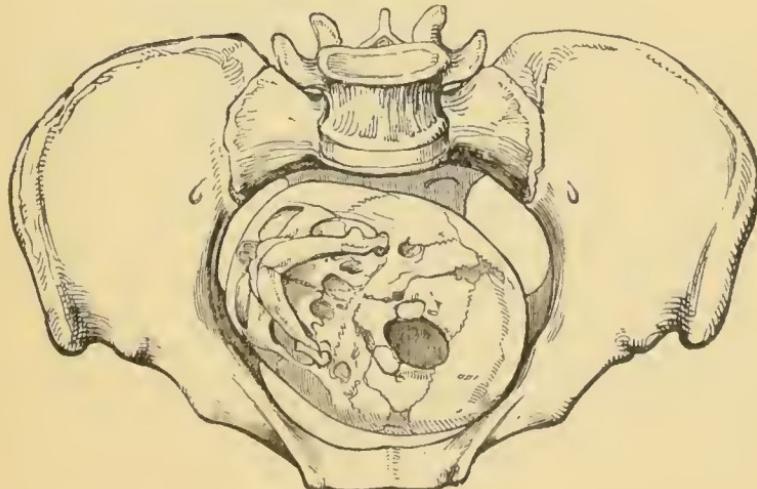
Before proceeding it is necessary for you to understand clearly what is meant by two or three words or phrases frequently used in the following pages:—

1. The *presentation* means the part of the child which comes first, or presents itself at the os uteri: thus we speak of head, breech, foot, or arm presentations.

2. The *position* of the child refers to the relation which the presenting part, the head, or breech, for example, bears to the pelvis of the mother. These positions were originally classified many years ago by M. Naegelè, and, as we have before stated, the reader will not be surprised at the adoption of his descriptions in the present volume.

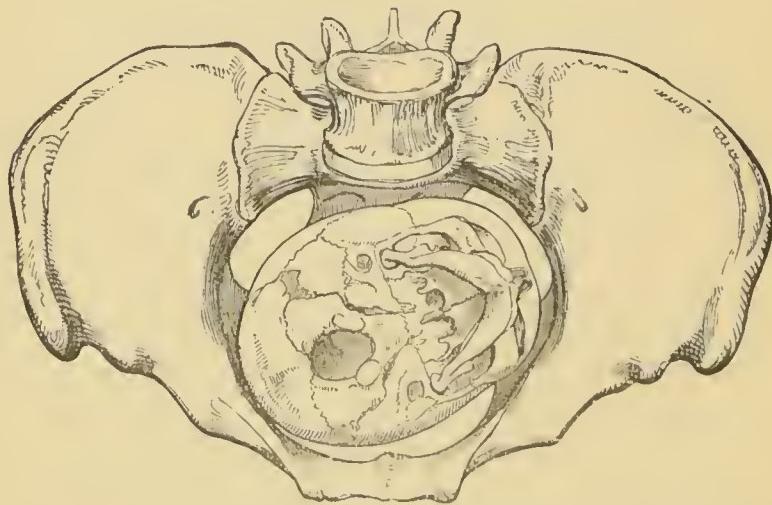
Position of the head is the relation which its diameters bear to those of the brim of the pelvis; or, in other words, the situation of the extreme points of the longitudinal diameter of the head compared with the extreme points of the oblique diameter of the brim. Now the former are sufficiently well indicated by the anterior and posterior fontanelles, and the latter by the foramen ovale, right and left, and the sacro-iliac synchondrosis, right and left. Naegelè states that the child usually presents with the head in either of two positions corresponding to the two oblique diameters, but with the superior fontanelle at either extremity: thus those may be called first and third, will belong to the left oblique, and the second and fourth to the right oblique; but it is more convenient with the majority of German and English modern writers, to make *four*, which therefore we have adopted. In the *first* (fig. 18), the posterior

Fig. 18.



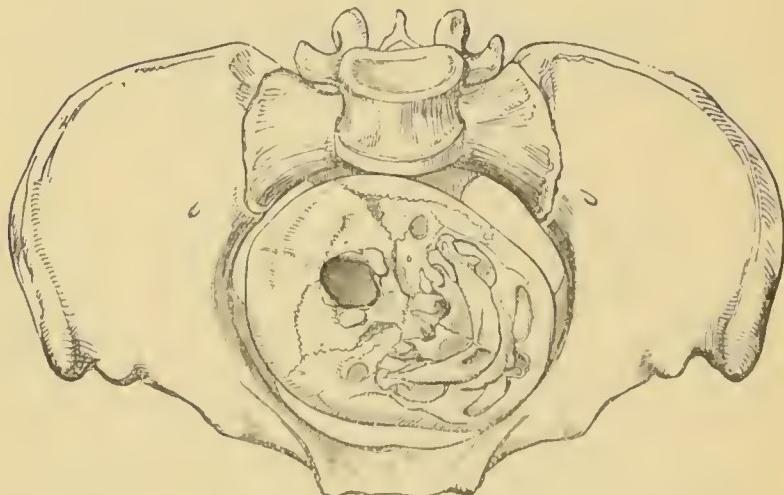
fontanelle corresponds to the left foramen ovale; in the *second* (fig. 19), to the right foramen ovale; in the

Fig. 19.



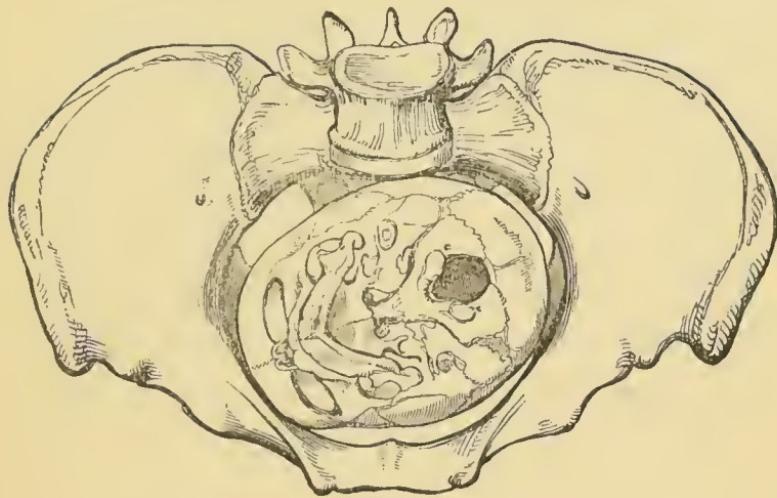
third (fig. 20), to the right sacro-iliac synchondrosis;

Fig. 20.



and in the *fourth* (fig. 21), to the left sacro-iliac synchondrosis; the anterior fontanelle of course corresponding to the opposite extreme of the oblique diameter.

Fig. 21.



3. The *stage of labor* is an arbitrary division of the whole process into portions or stages. The *first* or dilating stage begins with the first true pains, and ends when the head passes through the os uteri into the pelvis ; the *second* or expulsive stage ends when the child is born ; and the *third* stage when the placenta is expelled.

It is of the greatest importance to understand clearly these different stages of labor, as every labor, whether natural, difficult, or complex, exhibits them, and very often the importance of the symptoms depends upon the stage in which they occur.

Now let us consider the process of natural labor, and we shall do so the more fully, because this class of cases will form the bulk of your practice as midwives, and also, because the more perfect your knowledge of this class of cases the more easily you will recognise any deviation from it. We shall first describe the ordinary course of natural labor, and then lay down rules for the conduct of midwives or nursetenders.

In *natural labor*, we assume that the expulsive force, the pains, are sufficient to bring the child into the world ; that the passages are large enough, and that the

child presents with the head, and consequently the definition may run thus: "Head presentation: the labor uncomplicated, and the process completed by the natural efforts within twenty-four hours." At the same time, you must not lay too much stress upon the entire time occupied, as some natural labors may last more than twenty-four hours, and others, not so long, may be unnatural: it depends much more upon whether the time has been occupied by the first or second stage. Thus you see the importance of knowing how to distinguish each stage, and of noting carefully the beginning and end of each.

The beginning of labor is dated by the patient from the time that the uterine contractions become painful; and this is quite correct, provided that the entire uterus be engaged, and that the pains recur regularly. There is a kind of irregular contractions, however, which are called "*spurious or false pains*," from their teasing the patient without advancing the labor. They arise from various causes, as over fatigue, improper food, constipation, cold, etc., and you will know them by their irregularity, by their commencing at the fundus, or top of the womb, and being of limited extent, by their not being accompanied by mucus discharge or "shews," nor pushing forward the "bag of the waters," nor dilating the mouth of the womb. Whenever you find the pains to possess these characters, you may be sure that they are spurious pains, especially if, as is often the case, the patient has not arrived at the full time; and you had better recommend rest, bland food, and attention to the bowels. If this be not sufficient, the family medical attendant will give you an anodyne draught.

The *true pains*, on the other hand, recur at regular intervals, but these intervals gradually become shorter; in other words, the pains become quicker, and also stronger. And although they begin in the back, generally, they spread round to the front, until the entire womb is contracted and becomes hard. The

result of this contraction is, that the “bag of the waters,” as it is called, is pushed by degrees to the mouth of the womb, and gradually dilates it: at the same time, there is a pretty abundant discharge of mucus from the vagina. These peculiarities may almost always be observed, even at the beginning of labor, and when you find them, you may be satisfied that your patient is really in labor.

As the pains change their character as labor goes on, a convenient distinction has been made into “*cutting or grinding pains;*” and “*forcing or bearing down pains;*” the former are confined to the *first* stage of labor, and are short, piercing, and not very frequent at first; neither does the patient bear down with them, unless, very improperly, she be told to do so. As the labor goes on they increase, and often occasion as much suffering as the pains of the second stage. They cause the patient to cry out, and, perhaps, it is better that she should do so, to a certain extent; but she should be encouraged to control the expression of pain and restlessness within reasonable bounds. A refractory, noisy, restless patient certainly suffers more than a quiet, submissive one.

The “*forcing, or bearing down, or expulsive pains,*” are very different, and are well described by their name. The patient is obliged to bear down; she catches hold of something, stiffens her body, holds her breath, presses with her feet, and so effectually aids the uterine contractions in expelling the child. And whereas, with the grinding pains, the skin was cool, and the pulse quiet, but the patient restless and crying out, during the bearing down pains she cannot cry out, because she is obliged to hold her breath; she lies quiet in order to force; her skin becomes hot and bathed in perspiration, and her pulse quick. Thus, by the state of the skin and the cry alone, you will generally know in what stage the labor is.

As a general rule the waters come away about the termination of the first stage, and so may be taken as

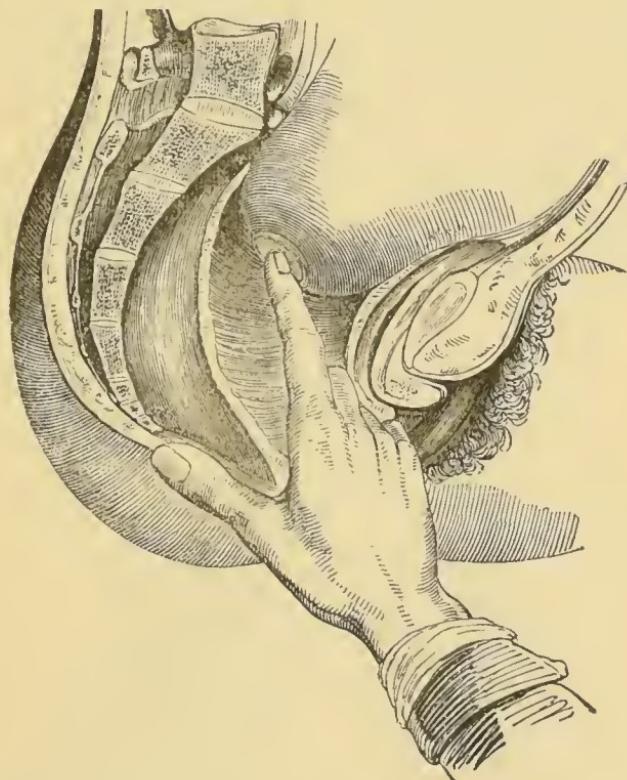
a sort of landmark. Now let us recapitulate the principal symptoms which you meet with in each stage. We have just described the pains of the *first stage*—they are cutting, increasingly frequent, gradually becoming stronger, rendering the patient restless and irritable, often low-spirited, and requiring soothing and encouraging treatment. During this stage, also, the stomach often becomes irritable, and the patient may be troubled with retching or vomiting, which rather does good than harm, as it relaxes the parts and diminishes the resistance.

During the first stage, as well as immediately after delivery, shivering is apt to occur, and more especially towards the termination of the first stage just as the head is pressing through the os uteri. The pulse and skin are but little affected, at least not until near its completion.

If, during this stage, you place your hand on the abdomen, you will feel the womb very hard during a pain, and somewhat softer, though still harder than before labor, during an interval. It is also inclined forward in order to place the child's head in a favourable position for entering the pelvis. Further information will be obtained by an internal examination which is to be thus made—the patient should be placed on her left side, with the hips close to the edge of the bed: then, having first thoroughly cleaned your hands by the nail brush with hot water and thymol or carbolic soap, you should anoint your right forefinger with carbolized oil or vasaline, and then pass it (under the clothes) from behind forward, until you arrive at the orifice of the vagina, into which you introduce it, and direct it rather backwards and upwards until you arrive at the os uteri (fig. 22), which will feel like a small ring, and within which you will find the membranes protruding. You must be very careful not to press too roughly, or you will rupture them; but when they are relaxed, you can feel the presenting part of the child through them. Thus you may ascertain if the labor be

natural, and how far it has advanced, judging by the size of the os uteri, and its softness or hardness. If you keep your finger at the os uteri during a pain, so as to estimate its force and the effect it produces, you may

Fig. 22.



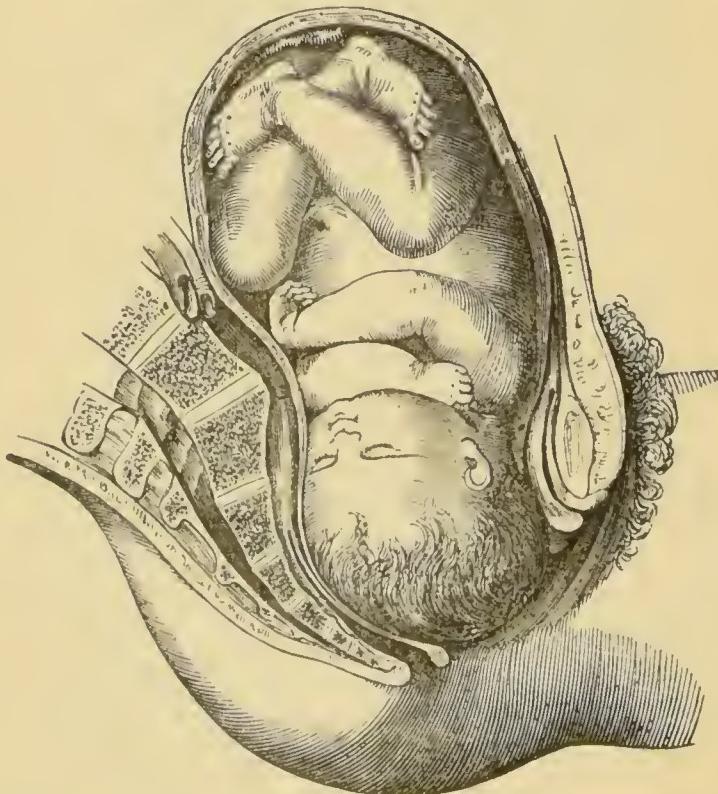
give a shrewd guess whether the labor is likely to be long or short. Of course you will also notice the state of the vagina, whether it is cool or hot, moist or dry, or whether there be any unusual obstruction, etc., and on withdrawing your finger, you will observe the character and amount of discharge. Remember, this examination is to be with gentleness and delicacy, without exposure or pain, and if all be right, it may not be necessary to repeat it during the first stage.

During the *second stage* the pains become longer, stronger, and more frequent, and are seconded by the efforts of the patient: the pulse is quick, the skin hot,

and the face flushed. Vomiting sometimes occurs in this stage (though it is more common in the first), but if the labor has not been unusually prolonged, it is neither a bad sign nor injurious. The patient also feels a degree of heaviness or drowsiness, so that it is not uncommon for her to doze between the pains; and this should always be permitted. As the head passes downward through the lower outlet, it presses upon some of the nerves which supply the lower limbs, and may cause severe cramps in the thighs or calves of the legs which will be somewhat relieved by friction.

If an *internal* or vaginal examination be made during this stage, you will neither feel the bag of the waters or the os uteri, as a general rule, for the former has

Fig. 23.



been ruptured, and the latter has been drawn upward over the child's head; but you will touch the head (or

whatever part presents) directly, and find it filling some portion of the vagina. During a pain you will feel it descend a little, and go back when the pain ceases ; but by the frequent repetition of this process, you will observe the head gradually come down, until it fill the pelvis and press down the perineum. At this time the progress becomes slower, a great many pains seem to cause little advance, and this for two reasons : first, the head has to be adapted to the lower outlet by a change of position, and by compression, or moulding, as it is termed ; and secondly (especially in a first labor), because it takes time to dilate the soft parts. If the expulsion of the child through the lower outlet were effected very rapidly, the perineum would probably be torn, and the patient seriously injured. So far, then, from regretting that the termination of labor should be somewhat slow, we ought to recognise therein a very wise and beneficial arrangement.

After the pressure upon the perineum has gone on some time, it begins to yield, and you find it bulge out with each pain, and by degrees the head begins to appear at the orifice of the vagina, pressing forward, then receding, but steadily gaining ground, until with a stronger pain than usual, or a double one, it passes into the world, generally with the back of the head directed forwards towards the pubis, and the face to the perineum ; but this position almost instantly changes, and the face is turned upwards to the right thigh of the mother, or downwards towards the bed : the former is however the more frequent. This change is the result of the shoulders having pressed into the pelvis, and as, in order to pass out, they must bring their transverse diameter to correspond to the antero-posterior diameter of the lower outlet, it follows that such an alteration will cause the face to turn upwards or downwards. The next pain, after the head is born, effects this ; and presses the shoulders on the perineum, over which they pass with much less difficulty and delay than the head ; and are followed

immediately by the body of the child, which completes the second stage. It is important for you to remember this second distension of the perineum, for if proper attention be not paid during the passage of the shoulders, the perineum, that escaped injury from the head, is very apt to be torn by the shoulder.

After the birth of the child, a short time of rest occurs, and then the womb again contracts, and pains are felt, but not so severe as formerly. This is for the expulsion of the afterbirth which is generally separated from the womb by the pains which expel the child, and only needs a further contraction to be removed entirely from the uterine cavity. After the birth of the child, there is always more or less discharge of blood, which continues till the placenta comes away, and then generally, though not always, diminishes. If the interval between the expulsion of the child and the placenta be long, the latter will be accompanied by clots. It is always of importance to keep watch over the amount of this discharge, in order that a remedy may be applied if it be excessive.

If the patient have had children, the pains return in an hour or two, and continue at intervals for a day or more, but they are seldom very severe, and after suckling has been fairly established, they subside. These are called "*afterpains*," and, though unpleasant, are of great use in expelling any clots which may be in the womb, and in preventing haemorrhage. After its contents have been expelled, the womb contracts, and may be felt as a hard tumor in the lower part of the belly, and about as large as the infant's head.

CHAPTER XI.

MANAGEMENT OF NATURAL LABOR.

Now that we have discussed pretty freely the symptoms of natural labor in the different stages, let us consider what is your duty : *i.e.*, what you have to do when you take charge of a patient.

First, as MIDWIFE, entrusted with the charge of the case.—There is not much to be done in the first stage of labor; you will, probably, be called at the beginning, before the pains are very strong; and then it is not necessary, especially if it be in the daytime, that the patient should go to bed immediately, as you will probably find the pains stronger and more frequent while she is sitting up. She may walk about the room a little, and occupy herself, so as to relieve the weariness of waiting. You need not interfere at this period with her ordinary diet, but she is better without stimulants, and you should make sure that the bowels are free, if necessary, by a dose of castor oil, or an injection of strained gruel, or warm water and sweet oil, or by a glycerine suppository. Before the labor is much advanced, it will be desirable that you should make an examination in the way already described, so as to ascertain the presentation, state of the os uteri, etc. Indeed the first thing you should do when called to a case of labor is to ascertain whether the presentation be natural or not. If the waters have not come away, and especially if the os uteri be but little dilated, you may hardly be able to say whether the head or the breech presents, but at least you may make sure that neither the hand, elbow, knee, or foot presents, and that is something. When the waters have escaped, and the os uteri is fully dilated, you may distinguish the head from the breech by its being harder and rounder, and by your being able to feel the sutures. The breech is also marked by the cleft between the buttocks, and the

organs of generation, which may be felt as the child descends. By this examination, you will also learn the state of the vagina, whether it is cool or hot, dry or moist, and still more the state of rigidity or relaxation of the perineum, which may assist you in forming an opinion upon the character and probable duration of the labor.

Bear in mind that every examination should be made quietly, gently, and without the least exposure of the patient. If all be right, it will not be necessary to examine again during the first stage, until the waters escape ; and if the patient be up, see that she is comfortably clothed, and yet that her dress is so arranged that she can undress quickly. Quiet and cheerful conversation, a cool room, mild diet, slight occupation, and a hopeful view of the ease, will be all that is necessary until the second stage sets in. She should never be encouraged to bear down, or "assist herself," as it is termed, until the second stage begins, and the pains force her to do so ; nor is her crying aloud objectionable, unless it be excessive and she lose all control of herself. She may also choose her position, and either sit, stand, or lie down during the pains.

When the waters break, unless this occur prematurely, the patient should, generally, go to bed ; but previously, the bed must be *made* so as to protect it from moisture, and to admit of the soiled linen being removed at once, and without disturbing the patient, and this is the way you should do it. Over the lower sheet you should spread a yard and a half square of waterproof cloth, at the right side of the bed, where the hips are to be, and hanging a little over the side ; upon this, the end of a sheet folded twice lengthwise, and upon this again, a sheet folded four times square, so that, after labor is over, this upper sheet can easily be removed, whilst the under one can be drawn out so as to bring a dry part under the patient. When the discharge has moderated, this sheet and the waterproof may be removed, and the under sheet and bedding will

be found perfectly dry, and may easily be kept so by the proper use of napkins.

When the patient is placed on the bed thus made, lying on her left side with her hips close to its edge, the under portion of her night-dress should be turned up above the hips, and a folded napkin or two so placed as to secure that the waters or discharges do not flood the bed, and make the patient uncomfortable, or render a change of dress necessary. Thus arranged, you will find the patient not only protected from discomfort at the time, but afterwards she can be made comfortable, without fatigue, exposure, or exertion.

The *second* stage having set in, you may make another examination, to see how labor is getting on, and you will find the head through the os uteri, or nearly so, and, with each pain, pressing downwards. As we are now assuming that all is right, you will have little to do until the head is on the perineum, nor need you make frequent examinations. Keep the room quiet and cool, and give the patient some cool drink occasionally, a little thin gruel, milk and water, whey, or weak tea, whichever she prefers; see that the bladder is emptied at intervals; do not mistake the escape of "the waters" for this; and if the bowels have not been moved previously, give an injection of warm water or thin gruel. You will encourage her more to bear her labor courageously, by a frank, simple, statement, that all is right and going on favourably, than by fallacious promises of speedy delivery, which you know, and she will soon find out, not to be true.

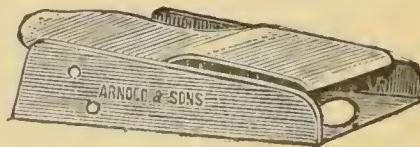
As the pains increase in strength, they compel the patient to "bear down," and generally she does not need to be told to do this, for she cannot help it; but you will do well to direct her only to do this so long as the pain is severe; as it declines, it will be of no use, and only occasion fatigue. It is usual to fasten a sheet round the bed-post for the patient to pull, and sometimes to place a box at her feet for her to push. The latter was considered by the late Dr. Churchill as

being objectionable on many accounts; but as the editor does not share that opinion, he would merely recommend that this matter should be settled in accordance with the patient's desire. There is no objection to the sheet, if you take care that the patient does not draw herself beyond the protected portion of the bed. Nevertheless the hand of a person sitting opposite to her is still better, as she can pull as much as she wishes without changing her position. Unless under peculiar circumstances, it is wrong to have any one sitting on the bed, or leaning over the patient, as it adds much to her heat and discomfort. As the labor advances, the patient becomes very hot, and you may remove some of the upper bed-clothes for a time.

Before the head presses on the perineum, you will have time to see after one or two other matters which are necessary; half a dozen strong pins, a pair of scissors,

Fig. 23.

some ligatures of housewife thread, or Duke's funis clamp (fig. 23), and the binder, together with a flannel receiver for the child, and a light shawl to throw over the patient's shoulders, should be in readiness. The binder should, generally, be rather less than half a yard wide, and from a yard and a half to two yards long; but it is best to make the binder according to measure, taking for its length what will go round the woman's hips, with two or three fingers' breadth additional, to allow for over-lapping; and for its breadth, taking from just beneath the breast to the level of the hip joint. It is usual to make the binder of strong diaper or twilled calico, doubled and stitched at the edges. Of whatever material it is made, it should be well washed and dried, but not starched, before it is required for use. There are many other binders ingeniously contrived with buckles and straps, and cut to fit the shape, but these are by no means as easily put on or removed, nor do they make as firm pressure as the simple binder above described.



When the head presses on the perineum, it is generally considered to be time for you to direct your attention to that part, or, as it is termed, to "support the perineum;" and that you may do so intelligently, it may be well to consider what it is you want to effect. Not, surely to offer an additional obstacle to the descent of the head or hinder its passage through the external orifice; but, simply and solely, to offer some gentle support, externally, against the pressure internally, to guard against the sudden escape of the head, to guide it forward, and, as a general rule, at the same time, to press the integuments gently *forwards*. You will do this most effectually, with the left hand, having the right free for other purposes. Cover the back of the left hand with a folded napkin, and place it obliquely across the perineum, so that the knuckles shall be applied to the coccyx or end of the sacrum, and the back of the fingers to the perineum. When the head passes downward, the hand thus applied will necessarily yield, even while giving support, or at least doing no active mischief (which is just what is wanted), and direct the head forward as if it were a continuation of the sacrum. And when you feel the head passing through the orifice, by slightly pressing the integuments forward, you may somewhat relax the tension, and render more easy the dilatation. This support should be applied only during a pain, as labor advances towards its termination. Whilst the left hand is thus employed, with the right you can ascertain the progress made by each pain, and when the head passes out you have a hand disengaged to receive it, and carry it forward, allowing it to make the usual half turn. The left hand is to continue at the perineum until the shoulders pass out, for this part is as frequently torn by the shoulders as by the head. According as the child is expelled from the uterus, it may be gradually carried forward into the bed, clear of the mother; no force should be used to hurry the birth, or to draw out the child, irrespective of the pains.

But it is only right to mention, that many persons prefer using the right hand to support the perineum, and in such case the ball of the hand is placed on the perineum, whilst the thumb is extended above, and the fingers below, on either side, whilst under some circumstances others advise its retraction. It is of little consequence which hand you use, provided you afford the support necessary, and do not overdo it; but if you are alone, there is an advantage in using the right, as the left may be wanted for another purpose, which will be better done by another person, when possible. As soon as the head is born, a hand, your own or another person's, should be placed upon the uterine tumor, following it down as it diminishes, and making firm pressure upon it when the body of the child is being expelled; this pressure should not be removed, until the uterus is so firmly and permanently contracted that you may safely apply the binder. If this be carefully done, you will rarely have "retained placenta," except from disease. As the hand must be kept on the uterus for some time, you should throw a light shawl, or small blanket, over the patient's shoulders and chest, to guard against cold.

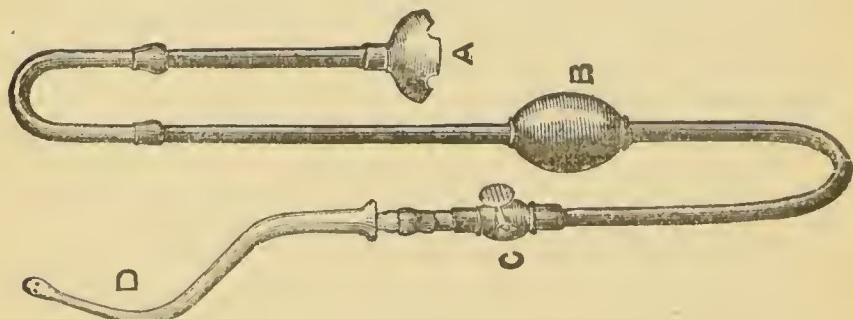
Suppose, then, the pressure over the uterus duly made by yourself or by an attendant, and the child born, it ought to cry immediately; but if it does not, and the cord pulsate well, you may let it rest a little on its back exposed to the air. Perhaps it may cry and breathe, but with a rattling noise, from a quantity of mucus in its mouth; this you should remove with the finger, or, if it be very abundant, you will secure its evacuation more completely by raising the child and holding it for a few moments, with its face downwards. Further connexion with the mother is unnecessary, when breathing is fully established, but you must be very sure that this is the case before you divide the navel-string. If you do so too soon, you may find the breathing and crying gradually diminish until they cease altogether. One ligature—the only essential one—should be applied

about an inch and a half from the navel, and drawn very tight ; the other, an inch or two nearer to the placenta ; and the cord divided between them. The object of the first ligature is to guard against the hæmorrhage from the navel, which might destroy the child ; and after the navel-string is divided, you should carefully examine the extremity, so as to be sure that there is no bleeding from it. If there be, and it will sometimes occur, owing to the escape of the jelly-like fluid, and the consequent shrinking of the funis, another ligature must be tightly applied nearer to the navel. It is for this reason that you should always leave an inch and a half of navel-string below the ligature, if you leave more you will find it an inconvenience afterwards—for these purposes Duke's Funis Clamp may be advantageously substituted for the ordinary ligature. Having thus separated the child, it may be rolled in flannel, and placed on the bed until you are ready to dress it.

From the birth of the child's head until after the expulsion of the placenta, when the binder is applied, the pressure of the hand above the uterus should never be relaxed. After an interval of a few minutes the uterus will be perceived to grow harder under the hand ; this is a contraction to expel the placenta, and whilst pressure is being made, after a lapse of twenty minutes, you may pass a finger into the vagina, to see if the placenta be there, or at the os uteri, when it may be gently and firmly pressed out from above, but never drawn down from below. If the placenta be not thus detached, let the patient rest, keeping up firm pressure on the uterus until the pain returns. We must caution you strongly against pulling at the cord, as by so doing, you may—1, break the funis ; 2, bring on hæmorrhage ; 3, cause hour-glass contraction of the uterus ; or 4, as the editor has seen from such malpraxis, you might possibly invert the uterus, *i.e.*, turn it inside out, an accident involving very great danger. When the afterbirth appears at the external orifice, receive it in your hand, and by

twisting it round, as you gently draw downwards, you will secure that no portion of the membranes is left behind. After the expulsion of the afterbirth, the hand may be removed from the uterus, and the binder applied. The parts should now be carefully cleaned, and sponged with warm water, and the vagina washed out with a tepid solution of boric acid, or Condy's Fluid, by means of an irrigator such as the following (fig. 24), which is manufactured by Messrs. Fannin & Co., Dublin, or by an ordinary syphon-syringe.

Fig. 24.



You will next proceed to apply the binder. Roll up about the half of it, and pass it underneath the patient to an assistant, who will unroll it, and pass over the end of it to you. Take care that it is fairly and smoothly under the hips; then, drawing it as tightly as you possibly can over the lower part of the abdomen and just below the prominence of the hips, pin it there first; and drawing it equally and firmly over the upper portion, fasten it by three or four other pins at equal distances from each other, so that a pleasant and comfortable, yet firm, pressure may be made.

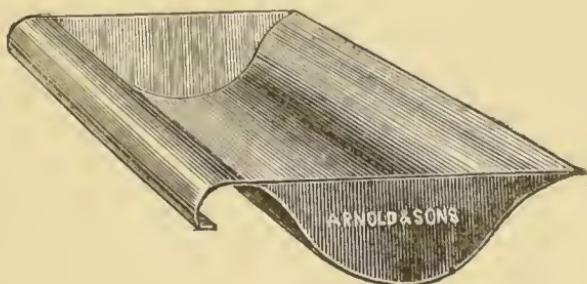
If additional pressure, by pads or compresses, should be necessary, and you will know the reasons for them by-and-by, fold a napkin *in a roll* first, and place that across the abdomen, *above the uterus*; then fold as many more as may be necessary, *in squares*, and place them *over the uterus*: the former will prevent the

womb from ascending in the abdomen, and the latter, from enlarging anteriorly. The binder is then to be drawn tightly over the whole. You will find that in this way you can make any amount of pressure you please. The application of the binder as well as almost every other midwifery operation with which you are concerned, may, and ought to be done, with little or no exposure, or uncovering of the patient: this is not only an offence against delicacy, but the patient runs great risk of catching cold, and cold in childbirth is a very serious thing indeed.

The pressure upon the uterus, is to be kept up steadily, with the hand.

There are two questions the patient is almost sure to ask: *first*, whether she may change her position, by turning on her back, or on the other side? There can be no objection to this in ordinary cases; but if there be any disposition to flooding, she had better remain as she is, that being the most convenient position; or if she be in a great mess from discharge, she had better wait until this is removed and she is made more comfortable. For this object the bed-scoop devised by Dr. Duke of Cheltenham (fig. 25) will be found most useful.

Fig. 25.



The *second* question is, whether she may go to sleep? Against this there is a prejudice amongst nurses, on the ground that if allowed to sleep without being disturbed by examination, should any flooding come on, she may faint without its being discovered, and per-

haps die without assistance. But if the midwife or nurse properly watch both the uterus, and the general condition of the patient as well as the discharge, so as to ascertain, from time to time, that there is no flooding either interiorly or exteriorly, there is no reason why the patient should not sleep, and certainly there is nothing which will refresh her so much.

Having now mentioned what you are to do, let us conclude by a few cautions as to what you are *not to do*.

1. You are not to amuse you patients by accounts of the wonderful and dangerous cases you have attended, even though the relation may be to your own credit.

2. You are not to relate anything which may tend to depress your patient, or render her anxious and uneasy.

3. You are not to tell lies, or make promise as to her labor being soon over, even for the purpose of cheering her, as she will surely find you out, and will not afterwards believe you, even when you tell the truth.

4. You are not to put her to bed during the first stage, nor encourage her to make bearing down efforts at an early period, because they can do no good and will fatigue her.

5. You are not to give hot or stimulating diet or drinks, under the belief that they will quicken the labor.

6. You are not to allow too many visitors in the room—one or two are quite enough; hot rooms, hot drinks, many visitors, and useless efforts are most pernicious, and may easily convert a natural labor into a tedious one, if not into something worse.

7. You are not to examine too frequently once you are satisfied that the presentation is natural, or you may irritate the parts, and lead the patient to suppose that something is wrong.

8. You are never to rupture the membranes, unless you find them filling the vagina, and are quite sure that the head presents.

9. You are not to keep the patient too hot during the second stage.

10. You are not to mistake the dribbling of "the waters" for passing urine, but make sure that the bladder is emptied at intervals.

11. You are never to attempt to dilate the parts, under a mischievous notion of preparing the passage for the exit of the child.

12. You are not to divide the navel-string before the child cries and breathes freely.

13. You are not to use any force in drawing down the funis in order to remove the placenta, which may be best delivered by "expression" in the way already described, if circumstances should render any interference necessary, which is seldom the case, sooner than twenty or thirty minutes after the birth of the child.

14. You are to apply the binder, remove the soiled linen, sponge the parts, and make the patient comfortable, without exposing her to cold.

CHAPTER XII.

THE NURSE'S DUTIES IN ORDINARY LABOR CASES CONTINUED.

In addition to what has been said in the foregoing lecture with regard to the duties of the midwife when in sole charge of a case, there are certain other matters necessary to be attended to by those who are employed by patients of the better classes, by whom a doctor is usually engaged, under whose directions the nurse is to act, which matters are generally not so much cared for by the persons who are satisfied with a midwife alone. In the former instance as midwives you stand alone in charge of the patient, whilst as nursetenders your office has an important relation to the attending accoucheur. A good nurse is the greatest possible comfort and assistance to a medical man, but a careless or ignorant one may occasion irreparable mischief. Remember, then, as nurses that your position

as to the medical attendant is quite secondary; you are to receive and implicitly obey his orders; you are to consult and defer to him upon every question which may arise, and you are to give him instant notice of any important change in the condition of his patient. Never allow yourself to canvass the merits of different practitioners; never repeat the foolish gossip you may hear concerning them; never interfere with the choice of the person who employs you; but to all medical men be the same respectful, intelligent, and obedient assistant.

A nurse is necessarily a confidential person, trusted with many things; and she should conscientiously regard as sacred all the information she may thus obtain. Lastly, a cheerful, kind, and genial manner, marked by respect for others, and therefore for herself, with orderly, neat habits, ready usefulness, and confidential trustworthiness and truthfulness, are recommendations to a nurse, not less essential than a thorough knowledge of her business.

Special duties of the monthly nurse.—As nurse-tender, you will, of course, be summoned before the attendance of the midwife is considered necessary, and your object should be, on the one hand, to avoid calling him unnecessarily early, and, on the other, to make sure that he is summoned in time. In order to decide upon this, you must take into consideration the distance at which he lives, the character of the patient's former labors, the rate of progress of the present labor, and the presentation. If, for instance, it be a first labor and the presentation natural, you may wait until the waters break, or the pains change their character, provided the distance be not considerable. If the former labors were rapid, you must send so much the sooner; and if you discover any other presentation than the head, or if you cannot make out the presentation, you must send instantly, no matter how little progress may have been made. To ascertain this, of course you must make an

examination in the way described ; but having done so, it will scarcely be necessary to repeat it, as the change of pains and of outcry will inform you when the second stage begins, and the doctor should then be in attendance.

On your arrival at the patient's house, you will ascertain her present state, and not put her to bed, unless for examination, during the first stage. If labor be only beginning, and it be day-time, she had better not remain in her bed-room, but leave that to be aired and settled. Or, if she remain in her room, it should be kept fresh, and everything in it arranged in a neat and orderly manner. The various things that are likely to be wanted, such as sheets, napkins, hazeline cream or vasaline, hot and cold water, baby clothes, anti-septic solution for doctor's hands or instruments, etc., should be placed within reach. The binder, pins, ligatures, and scissors should all be ready, and the bed made as described. All this may be done neatly and quietly, without hurry or parade. Hurry and fuss will agitate and disturb the patient, and your object should be to cheer, comfort and encourage her. She will, no doubt, be very glad to talk to you, and if it be her first time, to find out from you what she may have to go through. If all be right you have an opportunity of encouraging her, but in so doing refrain as much as possible from unnecessary details, nor make promises as to the period of her being well ; as if she once find out that you have been mistaken, or have been deceiving her, she will put no further trust in anything you tell her. Above all you should avoid gossiping, either with the patient's friends or servants, about anything you may have seen or heard in other families.

One of your first duties in the lying-in-room is to ascertain that the patient's bowels have been recently moved, and, if not, to give any suitable medicine or a plain enema of warm water or thin gruel, whilst throughout the labor you must take care that the patient should pass water at intervals. On the arrival of the medical

man, of course the patient is in his hands, and you receive your orders from him. Your chief business will be to have everything at hand which he may want, so that there may be neither delay nor hurry. If it should happen either that you have miscalculated the rate of progress, or that it has increased unexpectedly, or that the doctor has been delayed, you must act as midwife in the way first laid down ; but do not, in order to gain credit, attempt to hasten the birth of the child, or the expulsion of the placenta, simply let matters take their natural course, and take care to satisfy the doctor that you did not voluntarily delay too long ; as no aeeoueheur would willingly employ a nurse who negleected to send for him in time.

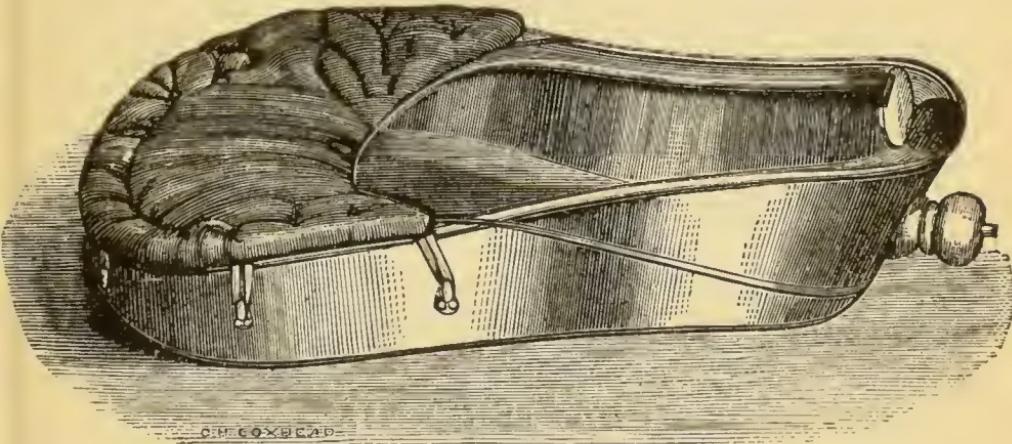
If the doctor be present, during the second stage, your place is on the opposite side of the bed, and you can give the patient your hand to pull until the head is born, when it is your duty to make steady and firm pressure upon the uterus as it contracts and descends ; and this you should do, not by pressing it directly towards the spine, but by enclosing the fundus of the womb in your hand, and pressing it downwards towards the pelvis. Then you will follow down the uterus until the child is born, and you will keep up this pressure until the binder is applied, and afterwards you can resume it if the doctor wishes. You should have a small basin ready to receive the after-birth.

During the labor, but especially during the second stage, the patient suffers more or less from thirst, and the most suitable drink will be whey, milk and water, or weak tea, or a moderate quantity of cold water, from a notion of keeping up the strength, wine is sometimes given ; but generally speaking, and under ordinary circumstances, this is unnecessary, and may rather tend to increase the heat, and sometimes to interfere with the labor pains. During the early part of the labor, the patient should be encouraged to take some light nourishment, for, as the pains increase, she will lose all inclination for eating. It is, therefore, of

obvious consequence that she should take something occasionally, if the labor be prolonged. As before observed, it is, moreover, the nurse's province to see that the bowels are freed during the early part of the labor, and that throughout, afterwards, the urine is discharged at regular intervals. Neglect of this latter precaution may lead to very unpleasant consequence.

When the child is born, and the placenta expelled, you should clean away all discharges, etc., from bed by use of bed scoop, and if necessary, either syringe or irrigate the vagina in the manner subsequently described, in so doing using, if possible, such an appliance as is here depicted, to avoid slopping the bed. Then

Fig. 26.



remove the soiled linen from the patient, cleanse the parts thoroughly, and apply warm napkins, so as to make her comfortable for the time, without exposure or exertion on her part; and having arranged the bed-clothes, which were lightened during the heat of the second stage, you are at liberty to turn your attention to the infant, of which we shall speak presently.

When the doctor leaves the house, the nurse's first duty is to see that his directions are carried out. Remembering all the patient has gone through, it is evident to common sense, that the quieter she is kept

the better: not more than one or two persons should be allowed to enter the room, and no running in and out should be permitted. There should be very little conversation, and that neither in a loud tone, nor in whispers, for the latter tease the patient by exciting but not gratifying her curiosity, and the former will give a headache. The room should be shaded, but not kept too dark, the temperature should be carefully regulated, and sufficient ventilation secured.

It may be well to recapitulate the chief requisites for the lying-in-room:—1. A proper drinking-cup. 2. Waterproof sheet and soft clean new sponge. 3. A small basin for placenta, clots, etc. 4. Binders and napkins. 5. Strong pins. 6. Cold cream. 7. Bedpan. 8. Enema, vaginal syringe, and catheter. 9. Boric acid, or some other of those antiseptic solutions, the preparation and use of which will be considered in another portion of this work. 10. A couple of small bottles containing rectified spirits of turpentine, and aromatic spirits of ammonia. 11. Some brandy or other stimulant. 12. Feeding-bottle and bath for baby.

CHAPTER XIII.

OF THE NEW-BORN INFANT.

WHEN the child has been separated from the mother, it is usually rolled in flannel, and placed at the foot of the bed, or on a sofa, away from cold or draughts where it exercises its lungs by crying freely; nor is this injurious, for it is not by the first efforts, nor by gentle efforts, that respiration is fully established. Before laying it down, however, you should gently and carefully wipe the eyelids, to remove any discharge which may prove irritating, and see that there is no bleeding from the cord..

As soon as you are at liberty, your attention is required by the child, and the first procedure is washing. This should be done in warm water, with or without soap (it is not necessary), in a gentle and handy manner. It is not advisable to be so particular as to make the process very long, for the second washing will be far more effectual. The cheesy matter with which the child may be covered, and which is so difficult to remove by soap and water, will readily wash off if it be first smeared with lanoline or with sweet oil, but if not entirely removed by the first washing, it will be found dry and falling off in flakes or dust, the next time the child is undressed. It is still a common practice to apply whisky or brandy to the infant's head, but this appears a useless custom, and one which may lead to mischief, if a drop of the fluid should splash into the eye.

When the washing is finished, the child should be gently and thoroughly dried with warm, soft napkins, before the fire, and all its clothes having been warmed it should be dressed as speedily as possible, and made warm and comfortable. Do not forget before you put on the flannel binder, to make sure that there is no bleeding from the navel-string. If the funis clamp before described has not been used, a little soft rag, scorched if you like, should be folded around the remains of the funis and turned up upon the belly ; over this the flannel binder is placed. All the articles of dress that come in contact with the skin should be soft, and all handling performed gently, as is obviously necessary, if you consider the physical condition of a new-born infant. Strings should be substituted for pins, wherever it is possible, and all complicated contrivances avoided ; it is desirable a baby should be dressed or undressed as easily as possible. You must be very cautious with the few pins which are deemed necessary, not to allow the points to come in contact with the child ; and with the strings and bandages, that they be not too tight. Caps have long since gone

out of fashion in the baby's toilet but *a priori* it seems to us as natural to make a new-born infant's head as warm as any other part of the body by due covering in cold weather, and for this purpose, therefore, the child should be lightly enveloped in a loose woollen cloud or shawl for the first week or so.

Now, remember that, as regards dress, the infant requires softness, looseness, and warmth; and as regards handling, gentleness and dexterity.

After washing and dressing, comes the question of physic and food. No doubt, if the mother has plenty of milk, it will act as a purgative, and render medicine unnecessary; perhaps, even without it, the child's bowels might be moved spontaneously; nevertheless, as few women have milk the first day, and as the retention of the meconium is occasionally apt to gripe the child, and make it uneasy, it will be advisable to give a small teaspoonful of castor oil, if the bowels are not moved in the course of six hours. Sugar and water, or butter and sugar, are sometimes given to new-born infants, but if any purgative be required, castor oil is far better than such mixtures. If this produce no effect, you should examine and ascertain that the anus is not imperforate. In a subsequent lecture we shall consider the general management of infancy.

CHAPTER XIV.

CONVALESCENCE AFTER DELIVERY.

LET us now return to the patient, whom we left settled after delivery, and allowed to sleep; and trace the progress of her recovery, and the symptoms which characterize her convalescence.

A little observation will show you that the condition of the patient is much changed after labour. She is more exhausted than you might expect, from

the exertion she has made ; she is pale, wearied, and, as you say, "worn out;" yet, on the other hand, her senses are too acute, and she is painfully affected by light and noise, which she would not have minded previously. Her appetite is gone, and the various secretions are a good deal altered. This all arises from the shock to the nervous system, and is independent of both the exertion and the amount of blood lost.

Nay, this shock is sometimes so severe, especially after any obstetric operation, as to protract the recovery for many weeks, or even, in rare cases, to prove fatal.

In ordinary cases no medical treatment is required on account of this state of things ; but you must be careful to allow the patient to rest until she recover from it. Keep the room perfectly quiet, cool, and shaded ; forbid visitors, and allow no whispering, and little talking.

Even more care, caution, and stillness will be necessary after operations, or when the shock is more severe than usual. In such cases you will also have to carry out the directions of the medical attendant as to medicine and diet, and this you must always do with scrupulous punctuality. When directions have once been given, you are not at liberty to deviate from them, either to gratify the patient or her friends, or in accordance with any notion of your own ; but should any real necessity arise for departing from these directions, it should be reported to the doctor the first thing on his next visit.

The respiration and circulation remain somewhat hurried after delivery, but by degrees this hurry subsides ; and when this is the case, your only duty, in reference to it, will be to keep the patient comfortable, and tranquil. Should either the breathing or circulation become very quick or laboured, you must inform the medical attendant, and night and morning you should take and record the patient's temperature and pulse, and show the note of it to the doctor at his next visit.

Immediately after the expulsion of the placenta, the *uterus contracts*, and if all goes on well, this contraction continues permanently, but is increased now and then by afterpains. The womb may then be felt as a hard tumor in the lower part of the abdomen, about the size of an infant's head, and each day it diminishes, until at length, after six or eight days, it sinks into the pelvis, and cannot be felt.

The vagina has been, of course, very much stretched by the passage of the child, but it is so elastic that it speedily recovers its natural state. The inner edge of the perineum is often slightly torn in first labors; but if the laceration be not more than this, you will hardly be able to discover it the next day, and it is of no consequence. There is often, especially in first cases, some swelling and inflammation of the vulva which will be relieved by fomenting or poulticing.

Every day, and several times each day, for the first few days, you should make a point of ascertaining that the uterus is properly contracted; for as long as it is so, there is little fear of flooding. But it may be larger than it ought to be from various causes; and if you find it so, especially if the womb be tender on pressure, you must mention this to the doctor, and ask directions from him.

Use of the Binder.—A fresh binder carefully applied in the manner before described every morning, and tightened so as to afford firm support without being painful, is far preferable to any of the more elaborate obstetric belts elsewhere in vogue. If the nurse, however, is so ill-trained as to be incapable of so simple a matter as the correct and secure adjustment of a binder, it will be better that a well-fitting belt should be then used, as a badly adjusted binder becomes displaced very soon, and will require re-arrangement three or four times a day. You should always pay special attention to this matter, as it is a great vexation for a lady to find her figure spoiled when she is able to dress and go down stairs. The abdomen is

so loose for some time, that, unless artificial pressure be made, it is almost sure to distend from flatulence, and once distended, you will find it almost impossible to remedy it until the next confinement.

Local asepsis.—The external parts should be carefully washed and the vagina irrigated with warm water, or boric solution, immediately after confinement, and this during the puerperal period should be repeated twice daily, with every precaution against cold, a soiled sheet folded being then placed under the hips, and the patient kept covered. If you discover more than the slight laceration we have mentioned, or if there be any unusual inflammation or soreness about the vulva, you should call the attention of the doctor to it as soon as possible.

Afterpains.—Connected with the condition of the womb are the *afterpains*, which result from its contractions. In their situation and character they exactly resemble labor pains, but they are much less severe generally. You rarely observe them after the first confinement, and as rarely are they absent after subsequent ones. As a rule, they commence in the course of an hour or two after delivery, last for a minute or two, and then subside, to be renewed at intervals. During, or immediately after each, there is often a slight increase of the discharge, or some clots may be expelled, although the pains are themselves a security against flooding. They continue for two or three days, are increased for a time by suckling, but gradually become less frequent and less severe until they disappear.

This is the ordinary form of afterpains, and so far from regretting their occurrence, medical men consider them as beneficial when not too severe. In some instances, however, this is the case; they are as painful as labor pains, coming on very frequently, lasting some time, and depriving the patient of rest. Or, after apparently subsiding, they may recur on the third or fourth day, and at the same time you may observe the uterus larger than it ought to be; after a time you

will generally find a clot expelled, and then the after-pains cease.

Little treatment is required, as if the afterpains are natural and not excessive, a warm napkin, or a piece of flannel placed over the uterus, will afford temporary relief. In the more severe cases, you had better obtain a prescription from the medical attendant; or if you are acting alone as midwife, you may give a draught containing from twenty to twenty-five drops of laudanum. It is important to remember that unusually severe afterpains may run on into actual inflammation and so eventually endanger life. You may suspect this if rigors occur, or if the patient become feverish, and the abdomen tender on pressure; and it will then be your duty to communicate to the doctor the condition of the patient.

Attention to Lochial Discharges.—The discharge of blood which occurs after delivery diminishes in quantity, but continues for some time: this is called "*the lochia*," or "*lochial discharge*," or "*cleansings*." At first, it is red like blood, but after a few days it gradually becomes paler, then yellowish or greenish, and is called by nurses the "*green waters*." Occasionally the blood coagulates in the vagina, and forms a large clot, which may require pains to expel it, or it may even render passing water difficult. When expelled, it occasions the patient some alarm and uneasiness; but this you may relieve, as it is of no consequence, and merely indicates that the discharge has been more than usual. The quantity varies very much, and so does the duration of the discharge; sometimes it is very scanty, especially when the child dies before birth; and sometimes it ceases in a fortnight, especially when there is an abundant secretion of milk. It ought to be over in about a month at all events.

On the other hand, there may be too much at first; or it may come on more flush some days after delivery, on sitting up; or after nursing, especially if the nipples

be sore ; or it may return after having changed its character ; and in all these variations there may be nothing seriously astray. But it will only be right that you should acquaint the doctor with the occurrence, that he may decide whether any treatment be necessary.

It will be your special care that neither by cold nor exposure shall the discharge be checked. Napkins, well dried and warm, should be constantly applied, and changed often enough to prevent their becoming wet applications ; and the binder should be kept tight so long as the discharge is excessive. Nor should the patient be allowed to sit up or make any exertion until the quantity has moderated and the colour changed, or else it may so increase as to amount to flooding.

Owing partly to the quiet lying in bed, and partly to the relaxed state of the abdomen, the bowels are seldom moved after delivery until medicine be given ; and also the patient will sometimes allow the urine to accumulate in the bladder. Occasionally, indeed, when the second stage of labor has been tedious and difficult, she is not able to pass water at all for some days subsequently.

It is very desirable that the urine should be passed at moderate intervals, and you should induce her to try and do so at latest six or eight hours after delivery. The application of a warm cloth to the vulva will facilitate this, and, applied afterwards, it will remove any smarting. If the patient turn on her face and knees, she will sometimes succeed in voiding urine, when she cannot do so in any other position. If after one or two moderate efforts (and you must never allow much forcing) she is unsuccessful, you must obtain assistance and have the water drawn off, if you cannot readily perform this operation yourself. As, however, every midwife and nurse ought to learn to do this, we may here describe the best mode of passing the catheter. Place the patient on her back near

the edge of the bed, and pass your left hand beneath the bed-clothes, and between the labia, until you feel the arch of the pubis. You know that the orifice of the urethra must be just above that, and so will guide your finger to that opening. If you then pass an elastic catheter with the other hand along the inner side of the finger at the orifice of the vagina, it will almost certainly slip into the urethra. After it is introduced, place a small vessel between the thighs to receive the urine, and remember that during the whole of this proceeding in ordinary cases, no part of the patient's person is to be uncovered. Occasionally during labor, when the parts are swollen from pressure, or afterwards from inflammation, the operation cannot be performed without sight, and then you had better place the patient on her side and have a candle.

However desirable it may be that the bowels should be moved, it is not generally necessary to effect this by medicine for twenty-four or thirty-six hours after delivery. This interval will allow the patient to recover a little, and the organs to return more or less to their natural state. After that time, if they are not moved naturally, half an ounce of castor oil, to which a teaspoonful of rectified spirits of turpentine may be added, or a dose of Gregory's powder, or the common "black bottle" (senna, salts, and ginger), moderate in amount, or a teaspoonful of glycerine, may be given very early in the morning. If the first dose of medicine produce no effect, it may be repeated, or, what is perhaps better, an enema of a pint of warm water, or thin gruel, with a tablespoonful of castor oil, or table-salt may be given. Every nurse should have a syphon syringe with an enema pipe, as well as an elastic catheter, and take them with her to every ease she attends. In administering the enema, you will have to be very gentle: remember that all the parts are very tender: gently direct the point of the enema tube upwards and backwards use very little force, and stop and change the direction if the patient complain-

of pain. Should she suffer from piles, you had better not try the enema. And when the medicine operates, or the patient passes water, for the first few days do not let her sit straight up : she must use the bed pan, which should be warmed at the fire before using it, or be cased in flannel.

CHAPTER XV.

THE NURSE'S DUTIES IN NORMAL CASES AFTER DELIVERY.

In this lecture we shall briefly recapitulate the chief points to which, as obstetric nurses, it is necessary that your attention should be directed with regard to the general management in ordinary cases of your patients during the puerperal period or time of convalescence after delivery :—

1. You cannot be impressed too deeply with the necessity of cleanliness and tidiness, not only personally, but generally, as regards the sick room. The patient should be carefully washed, her hair settled, and her night-dress after the second day, changed morning and evening, the napkins changed twice a day or oftener, and the parts as frequently carefully washed with warm water, and dried. At the same time, as a general rule, the vagina should daily be carefully washed out with warm water with the syphon syringe, or, still better, with the irrigator, so as to avoid any risk of pumping up air, which may occur if the ordinary syringe be used. The bed-clothes should be straightened when tossed, the room dusted and made orderly every morning, all discharges and evacuations immediately removed, and everything kept in its proper place. Trifling as such things may seem, they exert a positive influence upon the patient, and may thus favour or hinder her convalescence.

2. The diet of the patient is of great importance, as it is evident that errors in diet, whether as to quantity or quality ought to be sedulously avoided. In general, the patient should be kept on bland, sloppy diet for four or five days ; your best guide will be the state of the milk ; when that secretion has been reduced to the ordinary quantity required by the child, or in other words, when the child is able to take all its mother has for it, the diet may safely be increased, if in other respects she is going on well. Whey, milk and water, barley water, or weak tea for ordinary drink ; gruel, panada, sago, tapioca, or bread and milk for lunch, and chicken broth, or beef tea, for dinner ; with tea, not too strong, in the evening, will afford sufficient variety ; bread and butter, of course, she may have. When the first rush of milk has subsided, about the fourth or fifth day, a little white fish ; then chicken, roast or boiled, a chop, etc., with a glass of wine and water, may be allowed for dinner, until she gradually resumes her ordinary diet. It is very desirable that all these matters should be prepared very nicely, as the patient's appetite is delicate and fastidious.

3. Of even greater importance than the diet, is the keeping the patient in bed sufficiently long, and for some days in the supine position ; nor is it necessary here to dwell on the ill effects that may result from her sitting up or getting up too soon. The labour first, and then the lying in bed, render the system so sensitive, that a very slight exposure is sufficient to give cold. For three or four days the patient should absolutely be confined to the horizontal position, and not be allowed to sit up in bed. Cases of sudden death have repeatedly occurred from patients sitting up too soon after delivery. Then she may be propped up with pillows or a bed-chair during meals, or occasionally throughout the day, avoiding fatigue, and not even permitting this liberty if there has been flooding.

You should, under these circumstances, turn a deaf ear to all the patient's requests to leave her couch, even to have it made, before the eighth day. The bed can be shaken up very effectually, if she be placed near one edge, and then near the other while the bed is making. This prolonged rest allows the organs which have been so much disturbed, to return gradually to their natural condition, and by the eighth day the general sensibility is so much diminished that the patient is less susceptible of cold. On the eighth day, then, she may sit up for an hour, not dressed, for that would fatigue her too much, warmly wrapped up in petticoats, shawls, and dressing-gown. The next day she may sit up longer, and be more fully dressed, and afterwards she will gradually resume her usual habits in this respect.

Patients subject to prolapse or "bearing down" of the womb, or who have suffered from haemorrhage or any complication during or after labour, must be restricted to the horizontal position for a longer period, as will be directed by the doctor, by which time the restoration of the parts to their natural condition is generally completed, and in many cases the prolapse or bearing down does not return.

Nevertheless, under some circumstances, the foregoing rules must be departed from, more especially when, by the too rigid maintenance of the supine position, the necessary drainage of discharges and secretions from the uterus being interfered with, it may become necessary to facilitate this by altering the position of the patient; but this question is one which should then be decided by the doctor and not by the nurse.

4. Another point of minor importance, but bearing upon the patient's comfort, is her occupation during the period of confinement after labor. For two or three days she is generally too weak to think about anything but her safety and her child, and too much occupied with these to need any other distraction. But as she gets stronger, the day passes heavily, and the or-

dinary sick-room gossip is hardly sufficient to satisfy any intelligent mind. If you are able to read nicely, as you ought to be, you may thus be a great comfort to your patient. In this way you may, in most cases, best soothe and console her by a brief extract from any suitable devotional work, and some short prayers, in accordance with the patient's faith, addressed on her behalf to Him to whom all in sorrow or suffering must turn; and which may be thus read in the morning, after washing and dressing. Whilst occasionally during the day, a few passages of an interesting but not too exciting work, will help materially to make the time pass pleasantly. For the first few days the patient ought not to read herself, but as she gets stronger, she will become uncomfortable if unoccupied, and provided the bed be placed sideways to the light, there can be no objection to her reading a little. When she sits up, she will, of course, be able to find employment that will not fatigue her.

CHAPTER XVI.

OF LACTATION, AND THE MANAGEMENT OF THE BREASTS DURING THE PUERPERAL STATE.

DURING the latter part of pregnancy, as you know, the breasts are enlarged, and even before labor often secrete a thin kind of milk; but you do not generally find true milk formed until after labor. About the end of the second, or during the third day after delivery (sometimes earlier), the breasts enlarge and become hard, and if not relieved, often very painful, particularly in first confinements.

This change may be preceded by a rigor, or fit of shivering, and accompanied by a degree of fever, with quick pulse, hot skin, headache, and thirst: these symptoms need not alarm you if you are satisfied that

they arise from the milk. Let us remark here, that the occurrence of a rigor in childbed is a circumstance that always demands particular attention, as it is often the first symptom of inflammation of the womb, or of some form of that most dangerous complaint, puerperal fever. If it be caused by the coming of the milk, it need occasion no alarm, but ascertain positively, and without delay, that this is really the cause of the rigor. You may come to this conclusion if you find that the breasts are becoming hard and tender, if the lochia continue in proper quantity, and if there be no pain or tenderness of the uterus. Whenever you are in doubt whether such shiverings be dependent or not upon the state of the breasts, your safest plan is to call in the assistance of the accoucheur, for the loss of a very few hours in a case of puerperal fever may place the woman beyond the power of medicine. Whenever your patient takes a shivering, therefore, no matter from what cause, attend to her *instantly*, as it is most desirable to check it. Put a hot jar or hot blanket to her feet; lay an additional blanket over her shoulders, and give her a warm drink of whey, tea, milk and water, or oatmeal tea. To this drink, a few grains (8 or 10) of nitre, or half a teaspoonful of sweet spirits of nitre, or a dessert-spoonful of minderous spirit may be added, if at hand.

The true remedy for lacteal enlargement of the breast is the application of the child; but in some cases the increase is so rapid, that the child can make no impression, especially with first children, or if the nipples be defective; and the breasts go on increasing, until, by the excessive distension, inflammation is excited and an abscess of the breast may be the result. In other cases, when the infant is put too often to the breast before the milk has come, or where the skin of the nipples is very tender, it becomes irritated and inflamed, and either cracks or ulcerates, giving rise to great suffering and disappointment. Nay, more, unless you are very careful, and even sometimes, in spite of

all your care, the inflammation may extend from the nipple into the gland of the breast, and an abcess form. We believe this, and cold from exposure, to be the two most frequent causes of this painful and troublesome affection.

How soon after delivery ought the child to be put to the breast? If the patient has had children before, and the breasts contain milk, the sooner the better; and in any case where haemorrhage has either occurred or is threatened after delivery, the writer would more over strongly advise the immediate application of the child to the breast whether there be milk present or not. Under ordinary circumstances, however, this may be postponed until after the mother has rested from the fatigue of labour, say in six or eight hours. If it be her first child, and the breasts be enlarged, generally speaking the child may be applied once in twenty-four hours, and twice or thrice the next day, if it gets any milk; but not more, lest the nipples should be irritated. If, however, the breasts are flaccid, you had better wait until the second or third day. If the draught be free, the child strong, and you are able to apply it early enough, and sufficiently frequently, you will almost certainly avoid milk fever, and any excessive and painful enlargement of the breasts; but the condition of the nipple may, possibly, interfere with the frequent application of the child. As the breasts increase, the child may make more ample use of them during the daytime, until on the fourth or fifth day its entire nourishment may generally be derived from the mother.

Should the breasts become hard, knotty, and painful, in spite of the efforts of the child, you in some cases may possibly afford relief, and facilitate the flow of milk, by rubbing them gently with a little warm oil—rubbing them *gently*, bear in mind, and not as if you were polishing a mahogany table. In performing this simple operation, the patient should lie on her back, and rather toward the side opposite to the breast that is to be rubbed, and you should

make the friction with your hand around the base of the breast first, and gradually approach the nipple. Do not move your hand in a direction from the nipple towards the base of the gland, but just the reverse. A small bit of camphor dissolved in the oil is a pleasant addition.

In this state of the breasts a little Belladonna ointment, or semi-fluid extract of Belladonna, spread on linen, may be applied to them, and often with much benefit. This application, however, must be washed off before the child is applied to the breast, as afterwards it might be thus poisoned, and hence by many the old-fashioned "cere-cloth" is still employed for the same purpose. This is nothing more than a piece of soft old linen, the size of the breast, having a hole cut in the centre for the nipple, on one side of which is spread a soft ointment of olive oil and bee's wax melted together. Although rather a dirty application, it is occasionally found to be productive of ease to the patient, and may then be kept on for two or three days.

We wish here to point out to you a distinction too often forgotten. When the breasts are enlarged and knotty from over-distension, rubbing may possibly afford relief; but if they are running on into inflammation, rubbing must make them worse, and destroy the only chance of an escape from an abscess. This subject will be more fully referred to subsequently, and, therefore, all that may be here added is that in these cases the chief distinction for your guidance is, that in over-distension the hardness is equal over the whole breast, there is little or no tenderness, and the skin is pale; whereas in inflammation, one part of the breast is particularly tender, and there is a peculiar hardness there; the breast is very painful when touched, and there is a blush of redness on the skin of some portion of it. Under such circumstances, if there be a doctor in attendance the nurse should at once report the matter to him and follow his

directions. If the doctor has ceased his visits, he should be recalled, and until his arrival soothing treatment by fomentations, poultices, etc., is obviously necessary.

As regards the nipples, we have already mentioned that the skin should be hardened during the latter months of pregnancy, by the application of spirits and water, after washing with soap and water, and drying. It is a good plan to sponge the nipples with cold water each time after suckling, and then to apply brandy and water. If you find the nipples becoming tender and raw, or cracked and painful, great relief may be obtained by the application of a small soft poultice, for a short time after suckling, and then for the use of a lotion of alum and water, or equal parts of tincture of catechu and water, or strong green tea, or by painting them with a little sulphurous (*not* sulphuric) acid. In some other cases, it is advisable to apply a weak solution of lunar caustic.

Mammary Inflammation. If, notwithstanding the early and careful application of the child, and attention to the nipples, the breasts should inflame, either from cold, over-secretion, or extension of inflammation from the sore nipple, what are you to do? Not to rub them, but to foment and poultice them until you can get advice; but if you should not be able to obtain this, six or eight leeches may be applied, followed by constant poulticing until either the inflammation subsides, or suppuration takes place; and in the meanwhile supporting the breast by a few long strips of Belladonna plaster or by a sling, so that it cannot hang down; taking care at the same time to keep the bowels free. During this process, it is better to confine the patient to a light slop diet; allowing broths if there be not much fever, but no wine until the abscess is evacuated. You should always remember that it is better to have the abscess opened than to let it break; in that way it will be more completely emptied, will heal sooner, and by thus avoiding the neighbourhood of the nipple, the future use of the breast may be secured.

But suppose the infant to be dead, or the patient unable or determined not to suckle her child, what are you to do? You cannot prevent the secretion of milk, nor are the methods occasionally employed for that purpose in the way of cold applications, etc., either safe or advisable. But if you remember that the amount of milk secreted depends partly upon the food taken into the system, and partly upon the amount of milk drawn from the breasts, you will see that you have a safer, though slower, method of putting an end to it. Give a dose or two of some saline purgative, such as the ordinary black draught, or Carlsbad salts, diminish the diet, especially the fluid portion of it, and take away a little milk occasionally, by a child or by a breast-pump, just enough to relieve the sense of distension, and you will soon find that less is secreted, and if you gradually diminish the amount you take away, in the course of a week or two, the patient will not require this assistance. At the same time you may have recourse to gentle frictions with ointment of Belladonna, warm fomentations, and the eere cloth, or Belladonna plaster.

When the milk runs freely on the application of the child, generally speaking no interference on your part will be neecessary; but, on the other hand, we have met with some instances in which the milk all ran away, so that with an ample supply the child was nearly starved. In one ease, both breasts kept continually leaking without cause; in other cases, when the rush or draught was excited in one breast, from the application of the child or any other cause, it not only was felt as usual in the other, but the milk ran from it as freely as it was drawn from the one in use. This may be ealled "ineontinenee of milk," and seems to depend upon some loeal weakness. In such eases, saline purgatives, astringents applied to the nipple, and the use of nipple glasses, have been reeommended.

At a more advanced period of nursing, when the mother is exposed to various external influencees, you

will find the milk liable to be affected both as to quantity and quality. Thus the exciting or depressing passions, and more especially the latter, will affect the quantity of milk; but they may do more, they may change its quality, and so injure the child seriously. Great grief, therefore, is a strong argument for weaning a child, or for substituting feeding for nursing, for a time. On the other hand, those emotions which merely check the secretion, are of less consequence; and in general, when they cease, the milk returns.

CHAPTER XVII.

RECOGNITION OF SOME DEVIATIONS FROM THE NORMAL COURSE OF RECOVERY AFTER DELIVERY.

THE foregoing account of the course of convalescence after child-birth, and of the general treatment of the different stages of this condition, should be quite sufficient to prevent you from having any difficulty in the ordinary management of lying-in women. Unfortunately, however, that period is liable to many and important deviations from the ordinary progress to recovery, the causes, symptoms, and general treatment of which disorders must be reserved for consideration in our subsequent part on Puerperal Diseases. Nevertheless it is absolutely essential in the present connexion that your attention should be briefly directed to one of the most important of these, so far, at least, as may enable you to recognize its premonitory symptoms, and hence to have recourse to timely medical aid for its prevention and treatment. More especially is it necessary for you to have some elementary knowledge of this kind with reference to such a disease as puerperal fever or septææmia: to obviate the invasion of which, and to eheek it if present, is a matter of highest importance requiring active medical treat-

ment. For, unquestionably to no disease is the old adage, prevention is better than cure, more applicable than to puerperal septicæmia, and hence we may briefly reeapitulate some of its usual premonitory symptoms, on the oeeurrence of any of which you should lose no time in sending for a doctor's assistance.

1. The oeeurrence of rigors, followed by any rise of temperature above the normal degree, viz., $98\cdot4^{\circ}$, particularly on the second or third day, if the breasts are not full and hard, and especially if there be pain in the abdomen. We have already spoken of the urgency of this symptom, and told you how to distinguish between shivering dependent upon the eoming of the milk (milk fever), and that caused by inflammation. If you cannot fairly attribute it to the milk, you must not lose a moment in sending for the dootor; if you delay but a few hours, the patient may be past help. Meantime, however, you may apply a fomentation to the abdomen, but take eare how you do it. Place a blanket folded lengthways under the patient, and next to her body; then wring out flannels in hot water, and apply them, but not too wet; then fold the ends of the blanket over all, keeping the bed linen thoroughly dry, and repeat this in ten minutes. Not a drop of water should be allowed to fall on the bed or night-clothes, and when you finish the fomentation, dry the patient thoroughly, and place a warm, dry flannel all over the abdomen.

Or, instead of the fomentation, you may apply a poultice of sealed bran (in a flannel bag), or linseed meal; the latter should be made of just sufficient consistenee not to run about, and applied as hot as the patient can bear it.

2. Severe pain in the uterus, extending down the thighs, even if it be only an exaggerated afterpain, demands relief; and as it may be more than this, viz., the commencement of inflammation, you had better obtain assistance, espeially if it be preeeded or aeeompanied by shivering.

3. The sudden stoppage of the lochia, especially if the milk be not abundant, or, on the other hand, an unusually profuse discharge, is too serious a matter to be neglected. Until you obtain assistance, you may in the former case, safely apply a poultice to the lower part of the abdomen, and in the latter, if the discharge amount to flooding, after tightening the binder, you may in the first place give a hot vaginal injection of plain water, or weak boric solution, as warm as the patient can well bear it; and subsequently, if still necessary, dip a napkin in cold water and apply it for a moment to the external parts. Do not make a slop about the patient, and do not let the wet napkin remain in contact with her, as it does no good after the first impression of cold.

4. An attack of vomiting or diarrhoea may occur without apparent cause, or as the consequence of repeated doses of medicine, and it is never to be overlooked. If it continue beyond a very short time, you had better call in a doctor.

PART III.

CHAPTER XVIII.

TEDIOUS AND UNNATURAL LABOR.

You will recollect that the first stage of labor commenced with the beginning of true labor pains, and ended with the passage of the head through the os uteri, of which the escape of the waters is generally, but not always, an indication. Now there are many causes which prolong this first stage, and all these we shall include under the head of tedious labor, and treat of it in the present chapter. By tedious labor, then, we mean a labor unduly prolonged in the first stage, and it is remarkable that by this delay little injury is done either to mother or child. No doubt by this cause, the mother will be very much fatigued, and the loss of sleep may be injurious, if she be nervous and delicate; but the special reason why we should endeavour to overcome the delay is that perhaps there may also occur protraction of the second stage, which is much more serious, and for which a long first stage will be a bad preparation.

Now let us see what are the causes of tedious labor, and their treatment.

1. *Feeble and inefficient action of the uterus.* In these cases you will find the pains weak and short, often seated in front, and not protruding the bag of the waters or dilating the os uteri. This may arise

from some inherent want of power in the uterus, and perhaps this is the most frequent cause ; but there are two other causes, viz., over-distension of the uterus, from excess of liquor amnii, or twins, which interferes with uterine action ; and *toughness of the membranes*, which prevents both the protrusion of the bag of the waters and their escape. The best remedy here is time and patience. Cheer and encourage the patient ; let her remain up and walk about occasionally ; see that she pass water at intervals, and that the bowels are free. Enemata are of double use here ; not only do they free the bowels, but they stimulate the uterus and strengthen the pains. If the patient be inclined to sleep, by all means allow her, as the pains will come on all the better afterwards. But suppose these means fail, and labor continues long without making progress, there are other measures which may be adopted, and some medicines, which may be given ; probably the rupture of the membrane may be advisable, but this requires the knowledge and judgment of a medical man to direct ; so that when you have tried the simpler plans without success, you had better ask for assistance.

2. *Rigidity of the os uteri.* In some cases, the os uteri resists the dilating power of the “bag of the waters” for a very long time, even when accompanied by really good pains. The immediate cause is the toughness, rigidity, or undilatability of the mouth of the womb itself, and this may depend partly upon the age of the woman and still more often is due to too frequent resort to local examination during labor, or to a too early rupture of the membrane which not only directly produces this condition, but also adds much to any delay caused by rigidity. In most cases you will find, on examination, that the edge of the os uteri is thin and hard, and rather contracting than dilating during a pain. Before it yields, you may observe that it becomes much thicker and softer. In the majority of cases, probably in time, it would

yield, but the patient would suffer much unnecessarily, and might be so much exhausted as to interfere with her recovery. In some cases of this kind, you find that the os uteri is so extremely small, that at first, perhaps, you can hardly make it out. When you meet either of these cases, you should allow a fair trial to the natural powers; keep the patient out of bed, let her walk about, give a large enema of warm water, not only to clear out the bowels, but also to relax the rigidity of the parts; support her strength and cheerfulness, give some of the light cool drinks we have mentioned ; and if after a fair time you find that no progress is made, and that the os uteri feels as rigid as ever, then call for further advice.

3. *Too early rupture of the membranes.* Sometimes the membranes are ruptured by clumsy examination ; or you may mistake the cause of delay, and rupture them too early or unnecessarily ; or they may give way of themselves ; and the effect is the same, viz., a considerable delay in the dilatation of the os uteri, and the passage of the head through it. In some cases, the waters escape some days before labor sets in, and, curious enough, in these cases the dilatation and progress of the labor does not seem to be delayed ; so that when you find this to be the case, you may cheer the patient with the assurance that it will not prolong her sufferings. In all such cases, ascertain at once what the presentation is, and lose no time if it be not natural in sending for medical assistance. If the head presents, little is required beyond patience and courage: the head will gradually dilate the os, though slowly, and the first stage will be completed. If, however, the os uteri be rigid and undilatable, it will be even more obstinate, from the absence of the bag of the waters, and in like manner you must get help.

4. *Obliquity of the uterus.* In some women, who have had many children, the abdomen is so much relaxed that the uterus falls forward during pregnancy, and when labor comes on, it does not quite resume

its natural position, and the child is not fairly directed towards the brim of the pelvis. Should you find this to be the case, you may remedy it, in a great measure, by putting on a binder which will support the uterus in its proper position, and also by making the patient lie on her back during the first stage. If the uterus lean to one side, you may correct it by placing her upon the other during this stage. As a general rule none of these obliquities delay the labor very much, neither are they very frequent.

So much for the different causes of tedious labor. Always bear in mind that you should exhibit patience and cheerfulness; encouraging your patient by the fact there is no danger. Moreover, that you are to keep the room cool and fresh, and see that the bladder and bowels are properly evacuated. The diet may be much as usual, and she had better take some light nourishment, such as chicken-broth, etc., occasionally, even if she have no appetite. Lastly, remember that the means at your demand for quickening the labor, though limited, require to be judiciously used, and if not efficacious, that you are not, on your own authority, to have recourse to more powerful ones, but to request the assistance of a physician

CHAPTER XIX.

POWERLESS LABOR.

As already said, delay in the first stage of labor inflicts comparatively little injury beyond fatigue and weariness, unless the second stage also be tedious, and this by no means follows as a necessary consequence. You may have a long first stage, and a short second stage, or the reverse. But delay in the second stage, from whatever cause, is very serious; and if it be

carried to excess, it may be dangerous or fatal. When, therefore, the labor is prolonged, after the head has passed through the os uteri, you should promptly obtain assistance, for this condition is beyond the duty of a midwife to deal with. In order to show you this we shall mention the course of such a case, and the symptoms that may arise when it is neglected, which were but too frequently exemplified in our earlier days when the second stage of labor was not uncommonly allowed to continue unrelieved for an almost indefinitely protracted period. Even recently we have had proof in our gynaecological wards in cases of vesico-vaginal fistula, consequent on delay of this kind, that such *malpraxis* is not yet altogether a thing of the past, and therefore its immediate effects during delivery must be here referred to. Under such now exceptional circumstances, the labor pains, which were good and strong, become irregular and weak, that is, they do not press down the head, or they may gradually cease, whilst the patient cries out as in the first stage. Then she may have shivering and vomiting, at first of natural matters, then of green, bilious, or dark-looking fluid. She now becomes restless, tossing, and throwing her arms about; the skin is hot and clammy or dry, the pulse quick, the tongue dry and brown, or loaded with white fur; the mind is disturbed and despondent; the vagina is hot and tender; the discharge is yellow or brownish, and of an offensive smell; the abdomen tender, and the patient cannot make water. If no assistance be obtained, she gets worse and worse; all these symptoms are aggravated, and new ones added; the vomiting is more frequent, and of darker fluid; the restlessness is increased, the pulse is rapid and feeble, the skin cold and clammy, the tongue brown and dry, the patient lies in a kind of stupor, with low muttering delirium, and death soon closes the scene, having for its victims both mother and child.

Fortunately, however, nowadays, we may rarely see

a case of this deplorable, or as we might rather say this almost criminal kind, involving as it does such utter neglect ; but we have described it, in order that knowing the consequence of delay, and the symptoms which arise, no such case may ever happen to you. It will be your own fault if it should, as the early symptoms, such as the pains getting weaker, the pulse quicker, and the patient feeble and restless, with vomiting and tenderness of the abdomen and vagina, are quite sufficient to show that some assistance, beyond what you can render, is necessary. It is not easy to say at what time these symptoms may arise ; it may be after four or five hours, or not until after twenty ; but we have no hesitation in saying that you ought never to allow the second stage to continue beyond three or four hours without further advice, even if no bad symptoms arise ; nor would you be right in waiting so long if the pains get feeble and the patient feverish and exhausted, long before which time you should ask for the help of a qualified obstetrician, by whom, if necessary, the delivery may be speedily accomplished with an instrument such as the short forceps.

There are various causes which give rise to a protracted second stage, such as inefficient action of the uterus, mental emotion, tumors, or other diseases of the uterus, but the point which especially concerns you, is not so much the cause as the effect, viz., the second stage being unduly prolonged, and the labor making no progress, and lastly, the patient becoming feverish. Whenever you find this combination of circumstances, you may be sure that the case threatens danger, and your responsibility will be very great if you neglect calling in assistance.

Meantime, you will carefully put in force all the instructions heretofore given for the management of labor ; you will keep the room as well as the patient cool ; milk, whey, weak chicken broth, or any other light drinks may be given, and such cheering encouragement as is consistent with truth, Occasionally the patient

may rise and walk about for a time, which will not only refresh her and allow the bed to cool, but in many cases quicken and strengthen the pains. On the other hand, do not needlessly give stimulating drinks, from the belief that they will assist the labor; do not heap too many bed-clothes upon the lying-in woman; do not allow too many persons in the room and about the bed do not require her to press down unless the pains oblige her; and above all do not make too frequent examinations; these errors, if committed, would tend materially to produce the condition we have described as protracted labor.

When the second stage is thus prolonged, you must be very careful that the patient passes water at intervals, so long as she is able, her becoming unable to do so, being an additional reason for not delaying to call in an accoucheur. In an earlier part of the labor, you will, of course, see that the bowels are freed, or, if not, you will take measures to free them.

Of all the causes by which labor may be thus rendered tedious or difficult in the second stage the most frequent is inertia of the uterus. The symptoms of an extreme case of this kind have been already described, and a few observations on its treatment may, therefore, be here introduced, for your use if called on to attend such a case under circumstances or in places where no medical assistance is available. Under such conditions, if the life of either a lying-in woman, or of the child, are likely to be endangered by any further protraction of the labor in a case of inertia in the second stage, then you must act on your own responsibility, and to the best of your ability to obviate that danger. With this view, therefore, if friction over the uterus, change of position, or an enema of hot water and salt fail to excite uterine action, you may and should have recourse to the only remedy that has any direct power in stimulating the muscular contractility of the uterus—namely, ergot of rye, which, however, you must bear in

mind can only be safely as well as usefully employed when given in suitable cases and in a proper manner. The cases of uterine inertia in the latter stage of a protracted labor, in which ergot may be thus given after the failure of the means thus referred to, are those in which the os uteri being fully dilated, the membranes ruptured, and the presenting foetal head within the pelvic cavity, there is no mechanical obstacle, such as might arise from malformations of the pelvis, unusual size of the child, the presence of any tumour, or rigidity of the soft parts, etc. If, therefore, the passage is open for the expulsion of the child, and the only impediment to delivery is the want of sufficient uterine action, you may, under these circumstances, endeavour to excite that contraction by giving an efficient dose—say, a full teaspoonful of the fresh “Liquor Ergotæ” of the Pharmacopœa, in half a wineglassful of water, and before repeating it, should that fail to produce the desired effect within half an hour, you should waste no time in obtaining the immediate aid of a qualified medical practitioner, if that can be procured, as otherwise the child, or the mother, if not both, may probably be lost.

CHAPTER XX.

O B S T R U C T E D L A B O R .

THE next deviation from natural labor of which we shall treat is obstructed labor; that is, labor obstructed or rendered difficult or impracticable from some obstruction in the soft parts. This always causes delay in the second stage, giving rise in the end to the same dangerous symptoms as those before mentioned in describing powerless labor. It is true that some of these obstructions seem to have more relation to the first stage, but if they prevent the first stage being

completed, they virtually delay the second stage, and the effects are the same. The following are the principal causes of difficult labor:—

1. *Minute or imperforate os uteri.* In some few cases, it may be found impossible to detect any opening into the womb; in others, disease has evidently closed the uterine orifice abnormally after conception, whilst in others the opening is congenitally so small as not to admit the necessary expansion. This is obviously of great consequence, as if during the progress of labor the orifice remains closed, or dilates too little, the patient will suffer the consequences of a prolonged second stage, until the case eventuates. If, however, you find it difficult to discern the os uteri on making an examination, you must not hastily conclude, either that there is none or a very minute one, because it is sometimes pushed so far back as to be nearly out of reach. In such cases you should wait a while, until the patient has had some pains, and then examine carefully again. If, after all your endeavours you really cannot detect any uterine opening, you had better obtain additional help. On the other hand, if you discern it, and it is very small, you may safely wait a few hours, to see the effect of continued pains, from which it may ultimately yield, but if not, and the pains apparently change their character into those of the second stage without effect, you should at once propose that further assistance should be obtained. If you are careful, you will be quite capable of ascertaining the existence of this obstacle, but its further management is too great a responsibility.

2. *Cancer of the uterus.* Pregnancy may occur notwithstanding the existence of cancer. We do not expect that you will be able to recognise this disease, nor is it necessary, for if you find the cervix unusually large, hard, and cartillagenous, the os uteri well marked by ulceration, and no dilatation produced by the pains, the case is clearly beyond you, and requires special assistance.

3. *Narrow and undilatable vagina.* In some women the passage is unusually small and contracted, offering considerable hindrance to the passage of the child. The more common circumstances in which we find narrowing to such a degree, are where inflammation has followed a former difficult labor, or operation, and, where from want of due care afterwards, the vagina in healing has been diminished in size by hard growths, cicatrices, or bands, etc. Thus you may find, on examination, that there are hard, grisly projections in some part, or there may be a narrowing like a ring, or in a corkscrew shape; or lastly, that the vagina may be partially or entirely closed at some point, so that you cannot reach the os uteri.

You cannot easily overlook or mistake this condition, and, as it is a serious obstruction, the sooner you place the case in more experienced hands the better. The great danger of these cases is the probability of rupture of the uterus or vagina: an accident which, as you will learn by-and-bye, is very commonly fatal to mother and child.

4. *Tumours in the pelvis.* Various peri-uterine, or uterine tumours and displacements are occasionally found in the pelvis, sometimes in the vagina itself, sometimes behind the vagina, so that when you make an examination, you perceive that there is something which, as it obstructs your examination, will also and more surely obstruct the passage of the child, or perhaps prevent its entering the pelvis. The treatment of such cases requires nice judgment; and as nothing will be gained by waiting, the moment you discover anything of this kind, you should obtain assistance. Meanwhile, keep the patient quiet and cool, support her strength, and do not encourage her to bear down.

5. *Imperforate hymen.* The fold of mucous membrane, called the hymen, when unbroken, may offer considerable resistance to delivery, and require surgical treatment. This is very uncommon, however, and you

can have no difficulty in detecting it when it does occur. Should you find it to be the case, you may wait an hour or two, to see what the natural powers will effect, but if they do not remove the obstacle in that time it will be necessary to obtain help and not prolong the labor.

6. *Rigidity of the perineum.* Although this may occasion considerable delay in the delivery, it comparatively seldom requires more than a good stock of patience. A sponge, wrung out in warm water, and applied to the part, or the free use of lanoline, or hazeline ointment, serves sometimes to favour relaxation, and can do no harm. More than this you have no business to attempt; above all, beware of trying to dilate the parts, or to draw the perineum backwards over the head of the child, or you may give rise to a laceration which may compromise the patient's safety, or, at any rate, render her miserable for life.

We have thus enumerated for you the principal obstacles to labor dependent on, or seated in, the soft parts: we have not discussed more fully the treatment necessary for each, because it requires experience which you cannot possess; but we have shown you how you may recognise these obstructions early, so as to place the case in other hands, before any mischief has been done by delay.

CHAPTER XXI.

DEFORMED PELVIS.

IN the group of cases we have now to bring under your notice, the hindrance to the progress of labor depends not upon any abnormal condition of the soft parts, nor upon the want of pains, but on some narrowness or deformity in the bony structure of the

pelvis; and it is the more serious, as we have no power of altering or removing it, but must adopt measures which ultimately may possibly affect the safety of the mother as well as that of the child. The deformity may occur at the brim, or in the cavity, or at the outlet of the pelvis; it may consist in the pelvic cavity being generally too small in its entirety, or else in some parts being bent or twisted out of its natural shape and position, or in a hard tumor growing from some bone of the pelvis. The amount of this distortion may vary very much; it may be so light as only to delay the passage of the head; or it may render it impossible for it to pass without assistance; or if still greater, a living child may not be able to pass; or lastly, it may be impossible for any delivery to take place through the natural passage, in both of which cases the child should be removed by some other way.

In such instances, if the cause of delay be undiscovered, and the case is allowed to run on, the bad symptoms of powerless labor will be developed, one after another, until finally both mother and child will be lost. From what has been already said, you will perceive that these cases are beyond your skill altogether, requiring, as they do, the assistance of a qualified obstetrician, and the only point which nearly concerns you is, how are you to detect their real nature, so as to demand such assistance in time. Before labor it is not easy, even for a medical man, to discover the existence of distortion, if slight; and unless very well marked, indeed, you could not be expected to do so; but if the woman be otherwise deformed, that is, if she have a crooked spine, or be rickety, you may safely conclude that the pelvis is below the full size. However, the case is altered when the patient is in labor, for then you have the head of the child to compare with the pelvis. Under these circumstances, if you find, after some hours of pain, and when the os uteri is soft and dilatable, or fully open, that only a small portion of

the head is forced into the brim; or again if you find, notwithstanding strong pains, that the head is wedged or jammed in the pelvis, making no progress, and not permitting your finger to pass round; or if, at the lower outlet, you feel the head obstructed by the lateral, or else by the sitting bones, or the coccyx posteriorly, you will have sufficient reason to know that the pelvis is too narrow in some part, or on the whole. It is true, that this impression may equally be produced when the child's head is enlarged from disease, and the pelvis is of the natural size; but as the same treatment will be equally necessary, the mistake will be of no consequence. When the head is thus wedged into the pelvis, such a case is commonly termed one of "impaction."

Formerly these cases were regarded as only remediable by the last resource of the obstetric art, namely, craniotomy, or other child-destroying operations. Nowadays, however, such horrible operations are fortunately comparatively seldom resorted to, experience having proved that by timely and judicious employment of other measures, and especially by the use of the double-curved, or long forceps a skilful obstetric surgeon may even in such cases succeed in the great aim of midwifery, namely, the delivery of a living child with safety to its mother.

This seems to be the proper place to give you some general instruction as to your duties, in case of obstetric operations. Always take care to have plenty of hot water, and sufficient light, if it should be necessary. Then you will receive orders from the attendant, and see that you have at hand all that he requires. Let your manner be calm and cheerful, free from hurry and fuss, and you will encourage the patient, who will draw her own conclusions from your demeanour, and the expression of your face. Under no circumstances, whether the patient be placed under an anaesthetic or not, ought you to give way to nervousness. Nor, if any serious or unexpected complication should occur during

an operation—such, for instance, as might arise from hæmorrhage, or from some difficulty or danger in connexion with the anæsthetic employed—should the well-trained nurse ever, for one moment, lose that coolness, promptitude in obeying directions, and steady presence of mind, without which, under such circumstances, could she be of use either to the patient or to the medical man in charge of the case. Throughout every obstetric operation, moreover, you should try to retain the patient in the position in which the doctor has placed her; and if she holds your hand, do not let her pull so much as to draw herself into the bed. When the operation is completed, let there be no excitement either of manner or language; remember that the patient is in a critical position, which may be converted into one of danger by any imprudence on her part or on yours; so act cautiously and wisely.

We have already spoken minutely of the care necessary after labor; and obviously after an operation still more care will be required. A shaded room, coolness, ventilation, quietness, and sleep, are essential; nor are you to relax in the least in your vigilance in carrying out the doctor's wishes and directions. No visitors, no talking, are to be allowed. If the baby be alive, it need not be put to the breast until the milk is freely secreted, and not then unless the patient is, in other respects, going on well. Low diet must be continued until the doctor orders it to be improved, and he should decide as to purgative medicines. You may be prepared for more difficulty than usual, or perhaps, some pain in passing water, and had better mention it at the physician's next visit, as after some operations it is common for the patient to require the removal of the urine. Be very particular in washing the external parts; a certain amount of inflammation you must expect, which will be soothed and relieved by the bathing. At the same time, if allowed of by the doctor, syringing the passages with warm water, boric solution, diluted Condyl's fluid,

or with camomile tea, should be carefully employed twice a day. In some of the cases described in this chapter, and which otherwise go on well, the subsequent inflammation runs on into sloughing or ulceration, not always very painful, and consequently overlooked, and in healing of which, those cicatrices to which we alluded in the last chapter may be formed; but in no instance where there is such inflammation should you attempt to manage the case yourself.

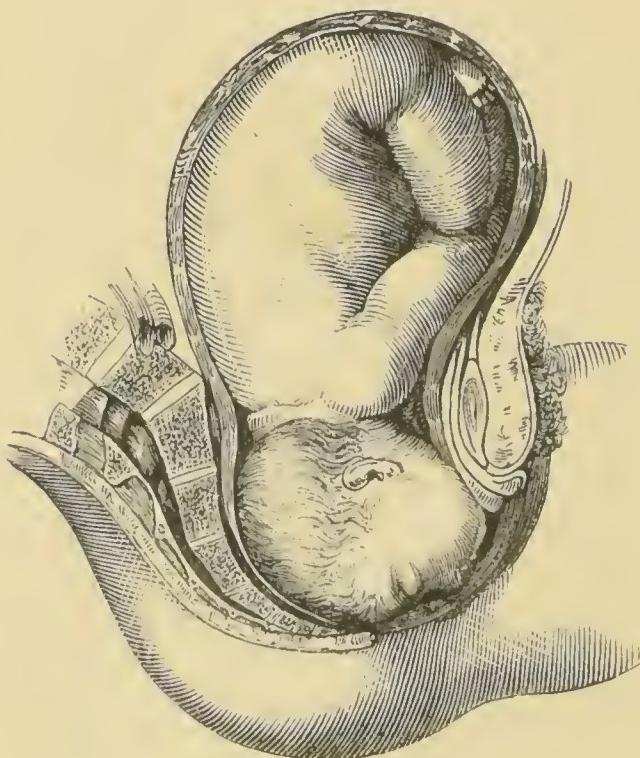
CHAPTER XXII.

MALPOSITIONS AND MALPRESENTATIONS OF THE CHILD.

Face presentations (*Fig. 27 and 27a*). In these cases, the face of the child is placed across the brim of the pelvis, the chin being towards one side, and the forehead towards the other: as the head descends, the chin almost always turns under the arch of the pubis, and comes out in front. At first, you will, probably, be a good deal puzzled, on making an examination, to say what presents. From the bulk which fills the pelvis, you may be pretty sure it is either the head, the face, or the breech. Now the head is known by being smooth, round, and hard, and having sutures; whilst the face is softer, uneven, and less round; moreover you can feel the depressions of the eyes, the prominence of the nose, and the orifice of the mouth, with a little care; though you must not suppose that it is as easy to do this within the pelvis as out of it. As a rule, however, you should in the way mentioned be able to distinguish the face from the head; but you will experience more doubt about thus recognising the breech, for, when the parts are swollen from pressure, they are not so unlike as you would expect. The buttocks, or one of them, are rounder than any part

of the face, and if it be a male child, the genital organs will present, moreover, the discharge of the meconium, which, under ordinary circumstances, only occurs in breech cases, is then conclusive. On the other hand, if you make out the nose and mouth, with the gums

Fig. 27.



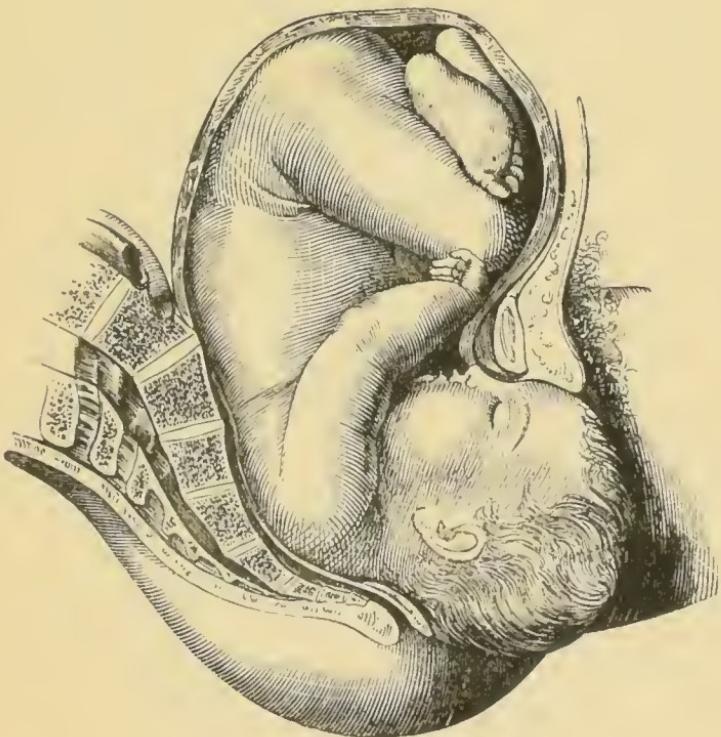
and tongue, these, with the absence of the signs of the breech, will enable you to decide that it is a face presentation.

If you are satisfied as to the presentation—and in making an examination to ascertain this you must be exceedingly careful, or you may injure the infant's eye—you will seldom need assistance, as face cases are

generally terminated favourably by the natural powers, or with such help as the nurse may properly afford.

You should, therefore, wait patiently (for face presentations are generally much more tedious than ordinary labor), until the perineum commences to distend, and then you must support it carefully, and very watchfully, inasmuch as there will be rather more stretching and chance of laceration than usual, in consequence of the head passing with its longest diameter over the pelvic floor, and requiring the

Fig. 27a.



largest amount of room for its accommodation. When the head is expelled, you should complete the delivery in the manner already described, and when

completed, you may turn your attention to the child which you may probably find a frightful looking object. The pressure of the os uteri over one cheek always makes it swell, so that it becomes of a purple red colour; and in this the lips, eyelids, and oftentimes the eyes participate, whilst the other portions of the face are less swollen, though somewhat distorted. If no damage has been done to the eye, all the rest is of no consequence; foment the face well with milk and water, then apply cold cream, and in a few hours the swelling will have subsided, leaving a reddish mark or a black eye, which will also disappear in a few days. It does not appear that there is more danger to mother or child with a face presentation than in ordinary labor. We may, perhaps, as well mention here that Denman makes face cases, as well as face to the pubis, and hand and head cases, varieties of natural labor, whilst breech, foot, and arm cases, constitute his third class of preternatural labors.

It occasionally happens in some of the less frequent positions of the head, and in a few cases of "face presentations," that at the lower outlet the forehead of the child is turned towards the symphysis pubis. You may recognise this by the smooth feel of the forehead, and its not filling the arch of the pubis, and also by feeling the back part of the head filling the pelvis. In most cases, patience is the only thing necessary; a little more time, and some stronger pains will expel the head. But you must not wait too long. After three or four hours, if the head does not descend, you had better ask for assistance, even although there may be no special danger apparent arising from the delay, either for mother or child.

CHAPTER XXIII.

BREECH PRESENTATIONS.

Breech Presentations (Fig. 28.)—When the buttock comes first, the labor, for a time, goes on as usual, and it is only on the “breaking of the waters” that anything unusual is discerned. Nor, indeed, so long as the membranes are unbroken, is it likely that any injury may happen to mother or child, except it should be either from hæmorrhage or convulsions.

Fig. 28.



In all cases of breech presentation, the buttocks descend into the pelvis, and then turning a little, their

transverse diameter is brought to correspond to the long (or antero-posterior) diameter of the lower outlet. You will find that the buttock, which is in front, passes first through the orifice into the world, subsequently you perceive the parts of generation, then the other buttock; after which the body of the child is expelled, and lastly the arms and head will now probably follow, with little assistance.

How are you to know that it is a breech presentation? At an early stage, you may mistake it for the head; but, after it is fairly in the pelvis, you will in this case feel a second round tumour, with a cleft or division between them; moreover, the presentation is much softer than the head, there is no suture to be felt, whilst most probably you will find meconium on the end of your finger, which will be decisive against its being either a head or a face. The latter is altogether more uneven and irregular, and you can recognise the nose and mouth.

This presentation, if well managed, is not more dangerous to the mother than the ordinary one, but much more so to the child; more than one-sixth of the number of children presenting with the breech being lost. The risk is less if the women have previously had a child, as the passages are more dilatable. The danger consists in pressure upon the funis, whilst the upper part of the body and head are passing through the pelvis; and thus if there be much delay, the child may be lost.

Of course, if you can obtain assistance, the chances of safety to the child will be increased; but, as you may not always be able to do so, we shall describe what it will then be necessary for you to do. During the first stage, and also during the greater part of the second stage, you may treat the case as you would one of natural labor, except that you had better tell the husband or friends the nature of the presentation as soon as you know it yourself, so as to escape blame if the child should unfortunately be lost; though it is

better, as a rule not to tell the patient anything about it.

When the buttocks distend the perineum, you must support it until they are fairly expelled. Now, remember that the slower the process of expulsion is at this period, the better it will be for the child; do not, therefore, be tempted to assist and draw it out. It is in little or no danger until the legs and feet have cleared the vulva, until which time you need not interfere. Subsequently, however, as there is pressure then upon the cord, and as the arms, which are stretched upwards, are an obstacle to the completion of labor, they must be brought down. Before doing this, draw the funis gently down, so as to take it off the stretch, and feel if the pulsation in it be strong and distinct; if so, you need be in no violent hurry, as you know thereby that the child is not yet in danger; but if the pulsation be feeble, you must then hasten the delivery. In bringing down the arms there is danger of breaking them, unless you proceed careful in the following way: pass one or two fingers over the back of the child's shoulder, until you reach the arm, as near the elbow as possible, then pass the arm across the face and chest of the child—do not pull it straight down—until it has descended into the pelvis to the external orifice, out of which it will fall. Do exactly the same with the other arm, the extraction of which will be easier; you may begin with either arm, although the one most within reach is the best, and this is generally the one next the pubis. In this procedure, and especially in bringing down the second arm, take care that you do not tear the perineum. When the arms are out, the head will turn so as to bring the face into the hollow of the sacrum, if you do not prevent it; take care, therefore, and leave it at liberty to do so. When this is done, find out the child's mouth, place your left forefinger in it, and press the chin gently towards the neck, whilst at the same time with the right hand draw the body of the child downwards and well forwards towards the thighs of

the mother during a pain. You are not to use too much force, or else you will rupture the perineum, or break the child's neck ; but if the pains are quick and strong, a little assistance may enable the head to be born in time to save the child's life. If it is not and if the perineum be rigid possibly it may not be thus delivered ; you must be contented with having done your best, and thankful if the mother has escaped injury. The rest of the treatment is the same as for natural labor.

Let us again caution you : firstly, not to hasten the expulsion of the child's body ; secondly, not to tear the perineum whilst trying to bring down the arms ; thirdly, not to pull the arms straight down, but across the face and chest, and not to use too much force ; fourthly, when the arms are out, not to use violence in extracting the head ; fifthly, to be sure and draw the body of the child well forward, and not straight down ; and sixthly, to take special care of the perineum. Remember, also, to keep the hips of the patient well over the side of the bed during such deliveries.

If the child cries when it is born it is all right ; but if not, lay it on the bed, and feel if the chord pulsates, for if so, it will be almost sure to come round. Do not cut the funis for a while, but laying it where it will not be pressed on or overstretched, rub the chest and body with some spirits, remove any mucus from the mouth, and then blow into it two or three times. If the child makes any effort to breathe, however feebly, you may apply some hartshorn to the nostrils. If, however, you fail, and the pulsation in the cord gets weaker, you may tie and divide it, and then place the child in a warm bath for a few minutes, rubbing it over with the hand. When you take it out of the bath, rub it all over with warm flannel again, and continue trying these means until it cries, or as long as the heart beats.

If, when the infant is born, it is black in the face, and the cord pulsates feebly, it is well to divide the

funis, and allow a tablespoonful or so of blood to escape, and then tie it. You may often restore the child's colour, and enable it to cry by this means. But if, when born, there is no pulsation in the cord, and no beating in the heart, your care will probably be useless —the child being dead.

No child apparently still-born, unless it be putrid, should, however, be abandoned without persistent efforts for its resuscitation, and in all cases of suspended animation at birth our treatment must be regulated by the cause of this condition. Thus, if the child's skin be blue, its lips and face livid and congested, a very few drops of blood allowed to escape from the cord may, as just said, relieve the embarrassed circulation. But if, as more generally happens, the infant be born in a state of syncope and anaemia, friction with spirits over the chest, and still more so over the spine, the warm bath, alternated with cold aspersion in some cases, and either the Marshall Hall or Silvester methods of exciting respiration, should be at once resorted to and steadily persevered in for a long time. The Silvester method, with friction over the thorax and spine, and the warm bath, are the means we place most reliance on.

CHAPTER XXIV.

FOOT PRESENTATIONS.

Foot Presentations (Fig. 29). There is little practical difference between a breech and foot presentation, except during the first stage, for when the legs are expelled, and the buttocks are at the vulva, it becomes, and is completed, as a breech ease. It is more dangerous to the child, however, for more than one-third of these children are lost. Whilst the child is in the womb, it normally occupies a sitting posture;

but, in these cases, instead of the legs being turned up in front of its body, the knees or the legs are bent up, and the feet or knees are at the os uteri, through which one or both are eventually driven. This explains why membranes often break very early in such cases, and it is one reason why you should always make an immediate examination when the waters escape, in order that if the presentation be unusual, you may take the necessary steps early.

Fig. 29.



In cases of foot presentation you will at once discern that neither the head nor breech presents, but one or both extremities; though whether hands or feet,

is the question; and a very important question, as their management is quite different. The characteristic marks of a foot are its length, its termination in the pointed heel, and the ends of the toes being nearly on the same level, and all close together: very unlike the broader hand, with the uneven fingers, and the thumb separated from them. The distinction seems very clear, nevertheless, the nurse cannot take too much care to avoid making so serious a mistake.

One caution is equally applicable in both instances: do not draw down the presenting part. As in breech, so in foot cases, it is an object that the first part of labor should not be hurried: let nature take her course, until the breech and body pass out, after which the management is precisely that which we have directed in breech presentations.

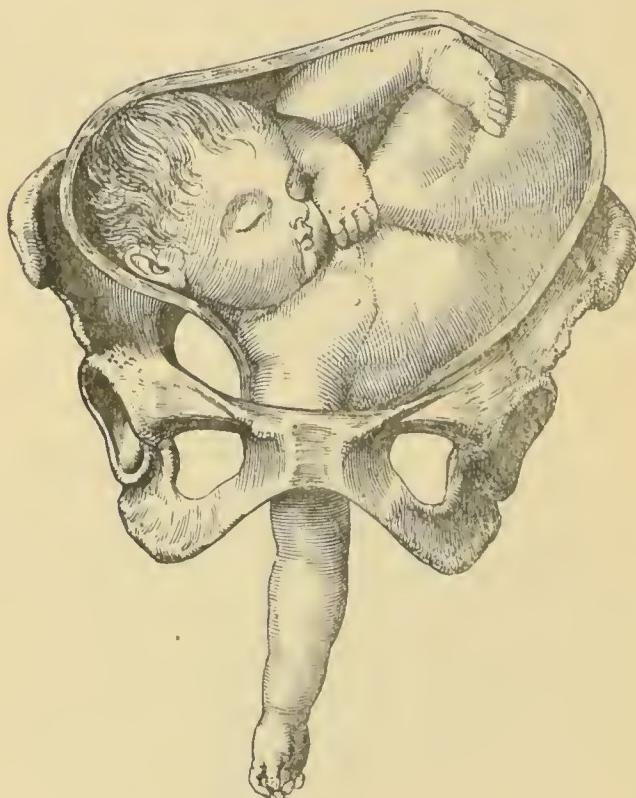
CHAPTER XXV.

ARM PRESENTATIONS.

Arm presentations (Fig. 30). Hitherto, the malpresentations, as they are called, that is, presentation of some other part than the head, though more perilous for the child, involve no increase of danger to the mother, and the labor, though, perhaps, somewhat tedious, will be generally terminated by the natural powers, with the trifling assistance before mentioned. But now we come to consider a malpresentation which involves most serious danger to mother and child, inasmuch, as with very rare exceptions, it cannot be terminated naturally, it always requiring an operation, viz., turning, or version, which may be accomplished by different methods. This is out of your province; but for the reason that the earlier the operation, the more easily and safely is it performed, it is essential that you

should be able to recognise the presentation as soon as you are called. As in foot cases, so in arm presentations, the membranes are very apt to give way early, if, however, in these cases you examine before this occurs, you will observe the absence of the bulk of the head, and then, upon carefully examining through the membranes (taking great care you don't break them), you may ascertain that an extremity presents, but without

Fig. 30.



being able to say whether foot or hand. In such a case, your safest way will be to send for an accoucheur to decide; but if you wait till the waters break, you must not leave the bedside for a moment until the question is decided. If the waters have escaped

before your arrival, you must instantly make an examination, and ascertain whether it is the arm and hand, or leg and foot. You will remember that the hand is distinguished from the foot by its shortness and rounded shape, the unequal length of the fingers, the separation of the thumb, and the absence of the heel. If you are able to reach the elbow, you will find it more pointed than the knee.

When you have made out an arm presentation, your course is very simple, but it requires promptitude and good sense. Send off instantly for an accoucheur, and at the same time save trouble and loss of time, by just writing down the nature of the case in which his assistance is required. Until the doctor's arrival keep your patient very quiet ; don't let her make the least effort to bear down, but rather encourage her crying out during a pain. Have plenty of warm water ready, some oil or vaseline, and an abundance of napkins, with the usual appliances of binder pads, pins, strings, etc. Subsequently, you will receive and implicitly obey the directions given to you, bearing in mind, the hints we have thrown out, when speaking of your duties in obstetric operations.

CHAPTER XXVI.

TWINS, TRIPLETS, AND CONGENITAL MALFORMATIONS.

In former times nursetenders were often wont to pretend to be very wise in the matter of predicting twins, triplets, etc. ; but as there are no signs by which, under ordinary circumstances a nurse can be *sure* of either, we would recommend you not to risk your reputation by guessing. These cases of plurality of children, whether twins or triplets, were placed by Denman in his fourth class of "complex labor."

Twin labors are generally slow, without apparent cause, and, probably, the first reason you will have for believing that there is more than one child, is from finding the uterus nearly as large as ever when you place your hand upon it, after the birth of the first child. As you should do this in all cases, you will not be long in doubt ; and when you find that to be the case, place the binder lightly round the patient, do not pull the naval string, but wait for the next pains, and then make a careful examination. Both children may present naturally or unnaturally, or one may present naturally and the other unnaturally ; and your conduct will be altogether guided by this circumstance. If after delivering the first child naturally, the head of the second presents, and the pains return, you will deliver the second child just as you did the first ; but if the pains do not return within an hour, you may break the membranes, and if this be not followed by the prospect of speedy delivery you had better get further advice. If the breech or feet of the second present, probably your wisest plan will be to ask medical help ; but if not the child must be delivered as described when speaking of breech presentations. It will be more easily born, and incur less risk, in consequence of the parts having been dilated by the first child. If the arm presents, or if the labor does not recommence in an hour, the advice and assistance of an obstetric physician will be necessary.

With regard to the afterbirths, in these cases you must be on your guard, as flooding is more likely to occur than with single children. On no account, interfere with the placenta of the first child, till both are born. Afterwards the management of the third stage may be conducted according to the general rules already laid down. You will, of course, maintain firm and continuous pressure over the womb, and when it contracts, you may find either the one or the two afterbirths expelled conjointly, and apparently joined

together or separately. In the former case, you will know that both plaeentæ have come away, if you find the two eords inserted into the mass, as of course, if you have only one cord, you have only one afterbirth. Do not use any traetile force with the cords, for you may break one, and, what is worse, in trying to hurry the placentæ away you may occasion flooding. After the expulsion of the placentæ, plae compresses above the uterus, and pin the binder tightly. Should there be hæmorrhage before or after the placentæ come away, and if these be not morbidly adherent, give a dose of ergot; and in any case send instantly for assistance, making firm pressure upon the uterus meantime.

The same rules apply when there are more children than two; the ehances of a malpresentation are, of course, increased, there is greater danger of flooding; and you will remember that, after such a delivery, a small lose of blood will produce much more alarming effects than under ordinary eircumstances. For some time after labor, you must maintain firm compression of the uterus with pads, properly placed under the binder, and keep a close wateh upon the discharge.

Monsters. There are only two eases whieh concern you as regards so-called “monsters. First, whether the child presents rightly, and is not too large to pass? This you must treat as a ease of natural labor; otherwise, you must obtain assistance, whether for malpresentation or excessive bulk. Secondly, let the “monster” be as frightful as you please, it can be hardly necessary to say that its life is not to be shortened by neglect or otherwise. To do so would be murder, legally punishable, and morally as criminal as any other murder would be; it is, therefore, your duty to do all you can to prolong its life, though you will generally fail.

There is another speeies of deformity more common, and whieh is the result of disease, viz.:—the child's head being enormously enlarged by hydrocephalus, or what is termed water on the brain. Probably you

may not be likely to detect this on examination : as it requires great experience : but after labor has lasted some time you will discover that the head is too large to enter or pass through the pelvis ; and whenever you find this out, it is your duty at once to place the case in other and more skilful hands.

PART IV.

CHAPTER XXVII.

COMPLEX LABOR.

WE now come to the third class of labors, termed complex or anomalous, in which the process of labor is complicated by one or other of the following accidents, viz., prolapse of the funis, retention of the placenta, flooding, etc. These you will remember constitute the fourth class of Denman, as he makes a separate subdivision of all those cases in which the child presents with any other part but the head. We shall first treat of

ORDER I.—PROLAPSE OF THE FUNIS.

It sometimes happens that the navel-string, when it is unusually long, lies below the child, near the os uteri, and when the membranes break, it slips down or is washed down by the water. This abnormal situation of the cord is favoured by a foot, or a knee, or an arm presentation, because these parts are not sufficiently bulky to fill the brim of the pelvis. Lastly, the waters may be discharged with such force, that their rush brings down a loop of the cord which did not previously lie below the head. This is a most dangerous accident for the child, because the cord is at once subjected to pressure which, unless removed within a very short time, will inevitably destroy the child. In such cases more than half of the children

are lost. It is clear, then, that instant delivery affords the only chance, and for this you must send as quickly as possible for an accoucheur. You will have no difficulty in recognising the loop of the funis at the os uteri, and your chief object must then be, by placing your finger within the loop, to feel whether it pulsates or not. Should there be any pulsation discernible, however faint, you should endeavour, if possible, to return the prolapsed funis, which may be feasible if there be sufficient space between the presenting part and the pelvic brim, by putting the patient in the knee-elbow position, and gently, without any compressing force, lifting or coaxing the cord back within the uterus. But do not trust to yourself for this purpose whenever you can obtain medical assistance. On the other hand, if the pulsation in the funis has completely and permanently ceased the child is dead, and you may act according to the nature of the labor; if natural wait and deliver; if unnatural or otherwise complicated, you must proceed in accordance with the rules already laid down.

C H A P T E R X X V I I I .

RETENTION OF THE PLACENTA.

IF you carefully adopt the method of not hurrying the expulsion of the child, and of making steady and continuous pressure upon the uterus after the head is born, you will rarely have the placenta detained beyond half an hour; but if this be neglected, and in some cases, notwithstanding every precaution, it may not come away for hours: in such cases you have "retained placenta." This may be occasioned by one or other of three causes, viz.: inertia of the uterus, irregular or "hour glass," uterine contractions, or lastly by morbid adhesion between the afterbirth and the womb. It

is not easy, or perhaps wise, to fix upon a definite time when we must have recourse to interference ; but, as a general rule, you may consider it necessary to do something if the placenta does not come away in an hour after the child's birth. What is to be done then should depend upon the doctor to determine. The occurrence of great discharge after the birth of the child will alone put a stop to all notion of waiting, and you should summon assistance immediately.

But if no haemorrhage occurs, and if you find that, although the uterus is pretty well contracted, yet the insertion of the cord into the placenta is not within reach, you may infer that the placenta is still held firm by the uterus. If, after repeating this examination, at intervals, for the time mentioned, it remains beyond reach, the case may fairly be considered one of retained placenta, and assistance requested. In the meantime, take care not to use any force in putting the cord on the stretch, or you may invert the uterus, *i.e.*, turn it inside out, or break the cord, or cause haemorrhage, or irregular contraction of the womb.

After manual delivery of the placenta, as in every other midwifery case in which the attendant's hand has to be introduced into the uterus, the woman is very liable to attacks of puerperal septicæmia, or, as it was formerly called, puerperal fever, and will require much care and watchfulness, and uterine irrigation. The slightest rigor, or pain, or tenderness of the abdomen, should meet with attention, especially if the milk does not come normally, or if the lochia are suppressed.

CHAPTER XXIX.

HÆMORRHAGE DURING LABOR.

THERE is no accident in the whole range of midwifery practice which is more alarming, and none which will better try your steadiness and self-possession than flooding, whether before or after delivery. It is evident that the mother, or both mother and child, are then in imminent danger ; and if you do not act promptly, or if you take too much upon yourself, you will incur a fearful responsibility. Fortunately, as a general rule in such instances, your duty is simple enough, and that is, to transfer the case to the doctor. Nevertheless, it is essential that you should understand the nature of the attack, and some methods of treatment which you may practice until he arrives, or in cases in which such assistance cannot be obtained ; we shall, therefore, say a few words on flooding *before* and *after* delivery.

1. *Hæmorrhage before Delivery*, when occurring within the first six months of gestation, is generally a symptom which threatens abortion or miscarriage, and always demands prompt attention, especially if it be accompanied by pain. If there be no pain, and but a small discharge, it may be possible to prevent it going further, and you ought to call in a medical practitioner immediately. If the discharge be considerable, it will probably destroy the life of the child, and then its expulsion will generally follow. In all such cases it is within the range of your duties to keep the patient quiet in bed, and cool, to give cold drinks, or if her bowels be confined, a saline purgative, and to apply a napkin dipped in cold water occasionally to the vulva. All beyond this is the province of the accoucheur.

Hæmorrhage occurring in the last three months has been divided into *accidental* and *unavoidable*. In each of these cases the flooding arises from the separation of the placenta or a portion of it from the uterus. In

the former this separation is an accidental occurrence, and may arise from falls, blows, shock, etc., the placenta occupying its natural position in the womb. If you are called to such a case, you will find more or less discharge, with or without labor pains, and you can generally trace out the cause. If there be pains, *the discharge generally diminishes during a pain*, and on examination you can feel the membranes at the os uteri.

There is a more obscure form of this accident, that is, when the blood is poured out between the placenta or membranes, and the uterus, but does not escape externally for a time, and this is chiefly indicated by the same pallor or faintness which results when the blood escapes externally.

2. *Unavoidable* hæmorrhage, on the other hand, occurs in consequence of the placenta being placed partly or wholly over the os uteri ; and as the dilatation of the os uteri necessarily separates the afterbirth from the uterus, hæmorrhage is unavoidable. Now you will find that this form of flooding occurs without any external cause, and that it generally happens for the first time about the seventh month, and at intervals afterwards until the patient is delivered. Again, unlike the former variety, the *flooding increases during a pain*. A vaginal examination, to one familiar with such cases, will detect the placenta, or a part of it, over the os uteri in this case, whereas only the membranes are to be felt in the accidental form of hæmorrhage.

The *immediate* danger is to be measured by the amount of the flooding ; but, looking to the future, there is a great difference between the two varieties. In accidental hæmorrhage, if the discharge be arrested before there is much exhaustion, the patient may have no return, and then go to her full time ; but in unavoidable hæmorrhage, even though you may stop the first attack, you may be quite sure that it will return, and most likely that artificial delivery must be performed before pregnancy is completed. The danger to

the child is great, in proportion to the loss, consequently in such cases the mortality is high.

Such cases imperatively demand the highest obstetric skill ; but until that can be obtained, you should keep the patient in bed, lightly covered, the room quite cool, and give all drinks cold. There will be no harm in your dipping a napkin in cold water, and applying it occasionally to the external parts, but do not make a slop about her person, and be sure to keep her feet warm. She must be prevented making any exertion, and should be guarded from all mental excitement as far as possible. Some beef-tea or chicken-broth, may be given from time to time, or wine if she be faint.

When the doctor has seen the patient, you will be careful to obtain from him minute instructions, and not to deviate from them a hair's-breadth. Incessant watchfulness and attention are demanded, for in these instances both doctor and nurse have a great weight of responsibility. Any change in the condition of the patient as well as any recurrence of haemorrhage should be instantly communicated : you cannot wait a moment to see if the patient will get better.

In such cases after delivery, the patient is in such a weak state, that the utmost care will be necessary in the administration of food, the admission of visitors, the preservation of quietness, and that general regulation of the sick room, which mark the good nurse.

The caution which was so frequently reiterated by Dr. Churchill, in his "Manual for Midwives," with regard to the necessity of a midwife seeking medical assistance as soon as possible in all cases of difficulty or danger arising from any deviation from natural labor, is especially applicable in dealing with a complication so hazardous as haemorrhage in connexion with parturition. Nevertheless, in those serious cases of flooding, it not unfrequently happens that the nurse in attendance must either promptly and effectively have resort to methods of treatment which, under ordinary

circumstances, are beyond the routine duties of her calling, or otherwise allow her patient to die under her eyes, before or after delivery, from this cause. Under such circumstances, therefore, in cases of flooding, when no doctor's timely help can be obtained, the midwife should be able not only to recognize the danger, but to avert it. Thus in cases of violent hæmorrhage during the first stage, if the flooding be unavoidable, from the attachment of the placenta within the cervical zone or arc, the nurse should not hesitate for a moment in plugging the vagina from the vulva to the os uteri, by means of a sufficient number of new well-washed sponges, wrung out and introduced so as to thoroughly fill the passage. No hæmorrhage can then take place externally, whilst any internal hæmorrhage is prevented by the presence of the foetal body *in utero*. These sponges may be left for some hours until either the doctor arrives, or until they are expelled by the natural efforts, when the os will be found fully expanded, and the delivery then expedited in the manner before described.

On the other hand, if the hæmorrhage be accidental, and the presentation natural, then the best course you can adopt is—firstly, to rupture the membranes, and thus allow the uterus to contract on the body of the child; and, secondly, if when the os is fully dilated, the hæmorrhage should still continue to any serious extent, you will then be justified, if there be no obstacle to delivery, in endeavouring to hasten this by giving a full dose of ergot, and using the other measures which we have described in the chapter on powerless labor.

CHAPTER XXX.

FLOODING AFTER DELIVERY.

HÆMORRHAGE after delivery may occur either before, or subsequently to the placenta being expelled. After attending a few cases, you will know what is the ordinary amount of discharge; and any cases in which this is much exceeded, may be considered by you as hæmorrhage. Nothing can be more horrifying than the torrent of blood which is sometimes poured forth, and your fears will not be lessened by the fainting which is its consequence. Yet you must be composed, prompt, and self-possessed, or you may lose your patient; for these cases too often prove fatal when not thus managed.

Now, as relaxation of the uterus is the cause of this flooding, contraction must be its remedy, whether the placenta have been expelled or not, and your object is therefore to produce this. Strong pressure over the uterus, and cold applications to the vulva, are the first remedies you will try. If the placenta has not been expelled, you will try whether pressure will extricate it. If so, or if it has been already expelled, you will continue a strong firm pressure with the hand upon the abdomen immediately above the fundus of the uterus, grasping and compressing it downwards until a firm and permanent contraction is secured, having previously loosened the binder. Meantime you may give a full dose of ergot; wash out the uterus with hot water, temperature 110° to 120° , to which a table-spoonful or two of turpentine may be added as the best styptic; lighten the bedclothes, take away the pillow and bolster, so as to keep the head low, open a window, and admit a stream of cold air, and give a few spoonfuls of brandy and water.

These measures, and more especially a steady firm pressure with your hand over the fundus uteri, you will continue until the flooding ceases, or until the

arrival of the doctor, for whom you should send immediately. Although, in such cases the danger is so mediate that, unless you are prepared in the meantime to take proper measure for its arrest, your patient may die before his arrival. It is the more imperative to obtain assistance when the afterbirth will not come away and haemorrhage occurs, as this will not stop until the placenta is removed.

Secondary Haemorrhage. A less frequent form of flooding, but one which occasions much alarm, and may, as we have seen, even prove fatal, may occur some days or weeks after delivery; and we mention it chiefly to tell you that it is a case for medical advice. However, until that is obtained, you cannot do wrong by placing the patient with her head as low as possible in bed, giving ergot, as before directed, keeping the room cool, insisting upon quiet, and above all using compression over the uterus, in the manner just directed, until you feel that it becomes as hard as a cricket ball under your hand, which condition, if permanently established, will prevent the probability of further flooding.

CHAPTER XXXI.

PUERPERAL CONVULSIONS.

In this chapter we wish to point out some symptoms which indicate the probability of this complication, so that by giving you an idea of what the attack is, that you may instantly recognise it and send promptly for help.

First, we may mention that puerperal convulsions, or eclampsia popularly termed "fits," more generally occur with first children; and that full plethoric women seem more liable to them than others. They may present themselves in two forms, viz.: apoplectic and

epileptic, either of which may occur during pregnancy, before labor sets in ; during labor or after delivery ; or they may begin with labor, and continue after delivery. It is rare that there is only one fit ; much more common to have ten, twenty, or thirty. In the ordinary form of puerperal convulsions, during the fit, the patient is quite unconscious, turning up her eyes, throwing about her arms and legs, the features work and are distorted, the mouth drawn and covered with froth, the teeth are clenched, and often the tongue bitten and the whole body convulsed ; in fact, she exhibits all the appearance of one who is seized with an attack of ordinary epilepsy or "falling sickness;" this state of things lasts for a time, and then the patient becomes quiet, breathing noisily. If the fits have been slight she may recover her senses ; if severe, she may remain insensible till the next fit ; and thus she will go on till the attack terminates. We need not say that such convulsions are most dangerous, or that the moment they occur a physician should be called in ; but it is quite possible that if you are watchful, you may be able to prevent an attack.

For example, when you are engaged to attend a lady with her first child, if you find her complain of headache, occasional giddiness, motes dancing before her eyes, dimness of sight, unsteadiness of walk—any, or all of these—you ought never to make light of them ; but if they are not relieved by freeing the bowels advise her to consult her medical attendant immediately.

Still more threatening will the case be if she complains that her hands as well as her feet swell, and if you observe that her face looks puffy. In fact, this kind of dropsical swelling depends upon a disordered state of the kidneys, or albuminuria, and is very constantly followed by convulsions during labor.

When the convulsions occur, there is little you can do before the arrival of the doctor, except it be to give a purgative enema, apply mustard to the calves

of the legs, pour cold water over the head, put the handle of a spoon between her teeth to prevent her biting her tongue during the fit, and also take care that the patient does not then fall out of the bed, or otherwise hurt herself. Having done this you must await the doctor's arrival, after which you will have full occupation in carefully and scrupulously carrying out his directions.

CHAPTER XXXII.

RUPTURE OF UTERUS.

Rupture of the Uterus not referring here to ordinary parturient laceration of the cervix uteri, is as formidable and fatal an accident as can happen, and one, the treatment of which is entirely beyond the province of the nurse, and for which she can take no distinct preventative measures, as there are rarely any sufficiently well marked premonitory symptoms. When it occurs at the time of labor, it is frequently either the consequence of disease during pregnancy, which has softened the structure of the womb, and disposed it to give way, or the result of violent pains, forcing the child's head against a narrow brim. The rent may occur at any part of the womb, and take any direction if there be disease; but most frequently it is found in the lower portion, where the uterus joins the vagina, and either in front or behind. The accident, as you might expect, is a very fatal one, some dying almost immediately, others living hours or days; and a few, very few, recovering: the writer has seen but two instances, one of which was recently brought under notice in his hospital. Had it been invariably fatal, we might have omitted this chapter; but as there is a possible chance, it is necessary that you should be able to recognise the symptoms in order to obtain help promptly.

The chief cases in which you would have reason to apprehend the occurrence of rupture, are those in which there exists some deformity or narrowing of the pelvis, or in which the woman's previous labors having been difficult or instrumental, you may suspect that her pelvis is more or less below the natural size. Therefore, if a woman, under these circumstances, has strong uterine action in the second stage of labor, without any proportionate advance of the head, it will obviously be your duty to send for assistance sooner than you otherwise need do, inasmuch as she would be exposed to the risk of having her womb lacerated if the violent pains continued.

The most striking symptoms are the sudden cessation of labor pains, perhaps after an unusually severe one ; the patient becoming weak and faint, and vomiting a dark-coloured fluid, a slight discharge of blood from the vagina, together with partial or complete recession of the presenting part.

Thus if when attending a lady in labor, this accident should occur, she will suddenly call out with the violence of the pain, and tell you, perhaps, that something has burst, nay, that she heard it crack ; then that she is dying, and you will see a shadow almost of death steal over her face, her pulse will become quick and very weak, the surface cold and clammy, the eyes sunk, and the voice changed, with vomiting perhaps : in fact, the aspect of the patient is that of collapse. If you make an examination, you may probably not be able to feel the head, it having receded in consequence of the child having escaped through the rent into the abdomen, except in those cases where the head was low down, or jammed in the pelvis, or when the rent does not extend through and through the wall of the vagina or uterus. The patient has no more labor pains, and generally, there is a discharge of blood from the vagina. The limbs of the child may be felt in the belly of the patient, which swells and becomes very tender. There are other symptoms, but the foregoing are the most

striking, and as they never occur in labor from any other cause, you then will by them have no difficulty in recognising rupture of the uterus. The only chance for the woman is instant assistance ; therefore lose not a moment in sending for medical aid. In any case of completed rupture with escape of the child into the peritoneal cavity, its immediate death, together with that of the mother is, as we have already said, the too general result.

CHAPTER XXXIII.

LACERATION OF THE PERINEUM.

LACERATION of the Perineum is an accident which you are much more likely to see, than that described in the previous chapter, and, though not a fatal one, it so seriously destroys the patient's comfort, that you will deservedly incur severe blame if it occur from any neglect on your part. With first children particularly, the mucous membrane of the vagina is more or less everted or pushed down by the protruding head, forming, as it were, an addition to the perineum ; and this little portion is very frequently torn. This, however, is not laceration of the perineum, which is untouched, and the torn part recedes after delivery, so that you could hardly find the rent if you looked for it.

Again, sometimes, in first cases chiefly, the fourchette or edge of the true perineum is, notwithstanding all our care, slightly cracked, without extending further, and this also we should hardly call a laceration of the perineum, in any practical sense. But if the rent extends much further along the central raphe of the perineum ; or, above all when it unfortunately reaches so far back as to break through the sphincter ani into the bowel, this indeed constitutes a serious laceration of the perineum, which, generally speaking, should be preventable, and the occurrence of which, in the latter

instance is one of the saddest accidents that can befall any lying-in patient. Moreover, as we have just pointed out, it is a misadventure that rarely, if ever occurs, even in operations, if the perineum be wisely and properly supported. There are various causes which predispose to it, such as a peculiar formation of the pelvis, which, however, is not common; the sudden shooting out of the head by a very strong pain; rigidity of the perineum, probably the most frequent cause; malposition of the child's head, as in face presentations, or when the forehead is towards the pelvis, or malpresentation. It may also be caused by an injudicious resort to a practice, which, in the hands of a skilful medical practitioner, is unquestionably advantageous in some cases, but with regard to which it would be needless to occupy space in a work such as this, intended mainly for nurses—namely, drawing back the perineum just as the head passes through the orifice. It may moreover be occasioned by attempts to assist the child's body through the external parts without supporting the perineum whilst the shoulders pass out; or lastly, in a breech or footing case, by using too much force in extracting the head.

For the prevention of this accident we would recommend the obstetric nurse to rely mainly on patience, time, and the use of lanoline or any other lubricant, during the distention of the perineum by the foetal head. And, secondly, at the same time steady, gentle manual support should be given from the point of the coccyx forward, during each pain, until it goes off completely, when the support should be left off, as nothing can be worse than continuous pressure on the perineum. This support should be renewed during every pain after the head begins to distend the perineum, gently pressing the skin forward over the head; and should be repeated when the shoulders pass out. If the pains are excessively violent, threatening to drive out the head before the orifice is sufficiently dilatable, you should make the patient cry out during a pain, which will

prevent her bearing down. If the perineum be rigid or inflamed, you may foment it with hot water and a sponge. And if you are managing a breech case, take care not to use so much force as to tear the perineum, which should then be supported in the same way by some other person.

If, notwithstanding all your care, the accident should occur, do not attempt to conceal it: if you have not been negligent, no blame is due to you; but you would be inexcusable if you did not state the case immediately, and request surgical assistance, as two or three sutures applied immediately, may under ordinary circumstances completely remedy the accident.

CHAPTER XXXIV.

INVERSION OF THE UTERUS

THIS grave complication of labor is a very rare one, which, probably, you may never meet; but as very serious consequences might result from any attempt on your part to meddle with such a case, and as the only chance of remedying it is by prompt assistance, it is important that you should be aware of its possibility, and able to recognize it.

Inversion of the womb means the uterus being turned inside out, which is the best possible description we can have of this accident. From causes not very satisfactorily settled, among which the most important is pulling too forcibly at the funis, the uterus instead of contracting to expel the placenta, is inverted, and then forced down to, or out of, the external orifice, with the placenta generally adhering to it. There is a strong bearing down pain, great haemorrhage generally, and much sinking, with a fluttering pulse, and cold, clammy sweats. But that which will decide you as to the nature of the case, is the tumor which protrudes;

which, though at first you may mistake it for the placenta, you will soon discover to be something more.

The only course for you to adopt under such circumstances is to send immediately for medical assistance, and until that arrives let the inverted uterus alone—do not touch it, do not try to push it back, do not even separate the placenta. But keep the patient quiet, give her a full dose of whiskey or brandy, apply a napkin to the tumor, and rely on the doctor, if he arrives before the death of the patient, for the rest.

PART V.

PUERPERAL DISEASES.

CHAPTER XXXV.

PUERPERAL FEVER OR SEPTICÆMIA.

IN this section we must refer to certain complications or diseases of the puerperal state, the preventive treatment and general management of which are matters of primary importance to the obstetric nurse. Hence, without here alluding to other disorders which, although peculiar to women after parturition, do not so directly come within the nurse's special province of prevention; we shall, in the first place, discuss the most serious of all puerperal complications, viz.:—septicæmia, or as it was formerly termed, lying-in fever.

To show how grave this disease is, and how essential it is for you as obstetric nurses to understand and take precautions to obviate its generally preventible causes, as well as to recognize its earliest symptoms, we may here call your attention to a few facts on which we have elsewhere more fully dilated. During a period of thirty-four years no less than 44,306 deaths from puerperal fever, or metria, have been registered in England. To these must be added 120,140 fatal cases tabulated as the result of “childbirth and metria.” In other words, within the comparatively short period mentioned, 164,446 deaths have occurred in England from a specific septic puerperal disease, the very existence of which has been disputed by some eminent

authorities. The statistics just referred to, and which do not include Ireland or Scotland, where metria is no less prevalent than in England, by no means, however, represent fully the fearful mortality occasioned by puerperal fever. The majority of lying-in women amongst the poor have no medical assistance during labor, being then dependent on the good offices of some friendly neighbour, or perhaps hardly less ignorant untrained midwife. Under such circumstances it would be as reasonable to hope for any rational treatment in a case of metria as to expect an accurate statement of the cause of death in a fatal case of this kind.

At any rate, the reports of the Registrar-General prove only too conclusively that we are, unfortunately, still very far from having arrived at that promised stamping out of puerperal septicæmia which some have anticipated from the great advance which has been made in the obstetric art of late years, especially the more rapid methods of delivery now generally practised, and the antiseptic treatment of puerperal patients.

Etiology or Causation of Puerperal Fever or Septicæmia.—With regard to the causes, pathology, and nomenclature of puerperal fever, the writer holds that all forms of metria, septicæmia, puerperal, or lying-in fever, however differently named, and whether epidemic or not, are really instances of the same disease, variously modified by the circumstances under which it occurs, and especially by the constitutional condition of the patient; the prevailing epidemic constitution of the atmosphere, and above all by the special source and character in each instance of the septic infective matter containing those specific micro-organisms, to the invasion and subsequent multiplication of which in the patient's system, every case of puerperal fever is ascribable. In this way the disease may originate in the puerperal patient from infection with the poison of other epidemic disorders, such as erysipelas, scarlatina, and typhus fever. Moreover, it may also be

introduced from without by specific septic germs from other puerperal patients, as evinced in the numerous epidemics of puerperal fever which at intervals have periodically prevailed in all large lying-in hospitals. According to some authorities this disease may possibly also originate in self-generated septic matter within the system of the lying-in patient ; and lastly, amongst the more common channels through which the germs of puerperal fever may invade our patients, must be mentioned lacerations of the perineum, or of the cervix uteri, during labor. In such instances, as in all other obstetric cases the infection may thus readily be introduced by the hands of the midwifery attendant, if so negligent, or so ignorant, as to neglect the duty of obviating that risk as far as possible, by scrupulous personal cleanliness and handwashing by use of nail brush, hot water, and carbolic soap, before each and every vaginal examination, or contact with the lying-in patient. In some cases, however, as already observed, it is impossible to trace puerperal septicæmia to any recognizable external source of infection, and in such cases it may be ascribed to anti-infection, or self poisoning with septic matter, resulting from decomposition of retained discharges, clots, membranes, or placental *debris*. Moreover, under certain conditions, as for instance, when for a long period of time large numbers of lying-in patients have in uninterrupted succession occupied the same wards, what has been described as a "puerperal atmosphere" may eventually be produced in which infective childbed fever occasionally becomes developed with a rapidity and attains a virulence unknown under other circumstances. And from such centres at uncertain intervals and under unrecognized conditions, the germs of septicæmia have apparently been diffused in wide-spread epidemics of puerperal fever.

Prevailing type and characteristics of puerperal fever.—Within the writer's experience the prevailing character or type of puerperal fever has changed re-

peatedly in successive epidemics. In his earlier days in the Rotunda Hospital, puerperal peritonitis, or utero-peritonitis, was the usual form of contagious febrile disease observed after parturition, such cases being then appropriately treated by mercurials with opium together with free application of leeches and poulticing to the hypogastrium. Some years later when he became one of the medical staff of the same institution, the disease had altered from an inflammatory to an asthenic, or low typhoid character, with little local pain or tenderness, but marked by intense prostration, muttering delirium, and evident symptoms of blood poisoning. This form of septicæmia, which has continued prevalent to the present time, as now most frequently observed, is of a distinctly remittent character. In these cases the septic nature of the disease is well shown by the clinical temperature chart which presents, more especially in unfavourable cases, the most marked and sudden alterations, as for instance from 104° or 105° to subnormal within a few hours, a circumstance too generally indicating the approaching fatal termination of the case. Even in less unfavourable instances there are daily matutinal remissions, the temperature and pulse in the second week of the illness sometimes falling each morning to a little above normal, and again rising gradually throughout the afternoon, until the former has reached 104° or even 105°, and the latter exceeds 120. Such symptoms obviously call for suitable stimulation and nutrition, and the removal, as far as possible, by uterine irrigation and other appropriate local treatment of all septic matter from the genital track. It is many years since the writer has seen a case of puerperal fever, which any form of depletion such as was formerly practised, could for a moment be thought of. In the present form of the disease in the way of medicine, as it is not intended here to consider the treatment so much as the prevention of puerperal septicæmia, all that need be said is that our main reliance (next to local asepsis and general stimula-

tion by alcohol, the administration of which can only be directed by the attending physician in each case) must be placed on the judicious use of quinine, or anti-pyrine, but above all the employment, whenever it can suitably be given, of turpentine, which may be regarded as the remedy, "par excellence," in the treatment of puerperal fever. And as such the writer would advise not only its external employment by stypes, but also its administration by the rectum and by the stomach as long as either may tolerate its use.

Continuous douche in cases of puerperal septicæmia.—By some authorities the irrigation of the vagina with a constant stream of hot water or weak carbolic solution, at a temperature of 110° for some hours, is stated to prove the most successful method of treating puerperal fever or septicæmia, whilst by others it is held that similar irrigation should be directly applied to the uterine cavity. For that purpose Dr. Kruz, of Florence, advises washing out the uterus with a stream of anti-septic fluid, preferably carbolic lotion, by means of a tube, or catheter, which is passed into the uterus and then fastened to the patient's leg. In this way, with the woman on a douche-pan having an escape-pipe, and the fluid held in a tank above, irrigation may be kept up for hours, or until the temperature falls to normal, and the pulse-rate is lowered. If no return of the pyrexia occurs after the lapse of a few hours, the douche-tube is withdrawn, to be re-inserted, should there be a subsequent rise of temperature. Slight carbolic intoxication, marked by smoky urine, etc., Kruz considers of little moment, as the symptoms rapidly pass away on suspension of the treatment. Of these continuous irrigations in appropriate cases, the results claimed are, that by their use the uterus is rapidly lessened in size, pain is quickly diminished, the discharges lose their fetid odour, insomnia is lessened, the temperature falls, while the perspiration is increased and all indications of inflammation vanish. The drawbacks to the employment of this method arising from

the dangers of carbolic poisoning and imperfections in the douche apparatus, are apparently, however, quite sufficient to exclude its employment by midwives, save when acting under medical direction.

Prevention of Puerperal Septicæmia (a. before delivery).—Puerperal septicæmia, however originating, though now far less universally deadly than was formerly the case, still, unfortunately, remains one of the most fatal of all the complications or consequences of child-bed, and hence its prevention rather than its treatment should be a primary object of our solicitude. For this purpose, therefore, it is always of great importance, to prepare, as far as possible, the constitution of every patient for the approaching critical time by the administration of some ferruginous tonic, such as the tincture of perchloride of iron, for a couple of months before confinement, up to which date her general health should be maintained at the highest level by attention to hygiene and diet, which should be light and nutritious, and by regulating the evacuations from bowels and kidneys, as well as by cheerful surroundings, occupation, and above all by as much open air exercise as possible.

Vaginal injections before delivery. The results as summarized by Dr. Herman in hospitals in which antiseptic injections before delivery are used are no better than those attained without them. The results in private practice must always be somewhat better than those in hospitals, and in small hospitals than in large, from the more numerous possibilities of infection in the latter; but with increasing completeness of antiseptic precautions the difference has been reduced, and may be expected to be further reduced. The usefulness of vaginal injections before delivery is theoretically not shown, practically not proved, moreover, such injections may be the means of doing harm, and, therefore, as Dr. Herman concludes, midwives ought not to be taught to give them.

Prevention of Puerperal Sepis (b. after delivery).—

After delivery the functions of the nurse are most important in the prevention of puerperal fever. Nor can too much stress be laid upon the absolute necessity of attention to the sanitary surroundings of the lying-in-room, as well as the most scrupulous personal cleanliness of the patient and those about her. The nurse's primary duty in every puerperal case is the removal of all septic matter, or possible sources of infection, not only from the external parts and vaginal orifice, by frequent sponging or washing with some antiseptic solution, but also by the thorough cleansing out of the uterus, and vagina when necessary, by hot water or antiseptic douching with the irrigator subject to the approval of the doctor, if there be one in attendance. And, although after a delivery which has been perfectly natural in its course, and uncomplicated in its circumstances, there may be no absolute necessity for, or advantage in, thus washing out the uterus, a practice which, on the old principle, that "meddlesome midwifery is bad midwifery," is objected to by some authorities in such cases, nevertheless the consensus of modern opinion is decidedly in its favour in every case, at least where there is reason for apprehending the possible occurrence of puerperal septicæmia. Therefore, above all, in every instance of any deviation from the course of natural labor demanding instrumental or manual interposition, or if the labor has been unduly protracted, or expulsion of the placenta delayed, or where injury to the parts has occurred, or in cases where from frequent examinations, or the general condition of the patient, or of her surroundings, there has been any special probability of the admission of sepis, then immediately after delivery the uterus should be thoroughly flushed either with that most useful of all aseptics—viz., plain hot water (temperature 110° to 120°), or with boric acid solution ($\frac{3}{2}$ to the pint), or with a ten volume solution of peroxide of hydrogen prepared in the manner hereafter described.

Employment of other antiseptic agents—Whilst

thus insisting on the paramount importance in the prevention of puerperal septicæmia, of perfect cleanliness, or asepsis, in the general management and surroundings (including her attendants) of every woman after delivery, and the value of local or utero-vaginal douching with hot water (temperature 115°), we would also desire to impress on every obstetric nurse the necessity of being thoroughly acquainted with the uses and method of employing those various antiseptic solutions or injections to which such importance is now attached in the prevention and treatment of puerperal fever. To this point we shall however return in a subsequent chapter, and all therefore we here say is that we ourselves generally rely on the less poisonous, germicide solutions, such as peroxide of hydrogen or boric acid, half ounce to the pint of hot water, or carbolic acid (1 in 80), or still milder disinfectants, such as turpentine (half an ounce to the pint), or Condy's Fluid, or Sanitas, in preference to that more active anti-septic which will be now more fully referred to, viz.:—*Corrosive Sublimate* for uterine irrigations. Corrosive sublimate is probably the most potent, and, at the same time, the most hazardous in its obstetric use, of all anti-septics or germicides. As commonly directed for washing out the uterus after delivery; for the prevention or in the treatment of puerperal septicæmia, the sublimate solution (1 in 3,000 strength), is most readily made by dissolving in two pints of hot water, one of the pellets of this salt prepared by Messrs. Burroughs and Welcome, each containing five grains of corrosive sublimate, together with some colouring matter, the addition of which is an essential precaution whenever such solutions are employed. By some writers corrosive sublimate solution of double this strength is recommended, and elsewhere such irrigations are used after delivery, but as fatal consequences have frequently followed their injudicious employment in this way, and as their possible benefits may be attained by less hazardous means, we trust that those for whom this work

is designed will never have recourse to them, unless it be under the direction of a competent medical practitioner on whom the responsibility for their use will then rest.

CHAPTER XXXVI.

SORE NIPPLES.

THIS is a very painful and troublesome occurrence which is more frequent with first children, though some women suffer from it after each confinement. It comes on generally after two or three days' suckling, and continues for an uncertain time, after which it generally subsides.

Causes.—In the majority of cases, it is simply the reiterated application of the child which causes fissuring of the nipples by removing the sebaceous secretion—so that the skin, when dry, contracts, slightly hardens, and cracks; or the nipples may be malformed—either “tucked in” or flat—and in either cases the child will be certain to make them sore. This process is frequently aggravated by a slight degree of inflammation, owing to the state of the child’s mouth, as is seen when the child suffers from aphthæ; and on the other hand, the discharge from the nipple may inflame and excoriate the child’s mouth.

Symptoms.—At first the nipple and areola are observed to be dry, rough, and harsh; then a great number of minute cracks may be seen; or the surface becomes excoriated, and pours out a serous discharge, which in some cases is acrid, and spreads the excoriation to the surrounding skin. Or the nipple may exhibit deeper fissures, dividing it into two or three portions. Lastly, in some cases the nipple becomes ulcerated, and part, or nearly the whole, destroyed. Each attempt at suckling makes the nipples worse for some time, and occasions them to bleed. The torture to the patient is very great, and it requires all her fortitude to persist in nursing, at the cost of so much suffering. But this is not all;

for if the inflammation be great, it is propagated along the lymphatics to the mammary gland, and then gives rise to inflammation and abscess, of which it is one of the most frequent causes.

Treatment.—To prevent this disorder the nipples should be washed with soap and water, and dried, and afterwards bathed with some astringent lotion such as tincture of tannin, eau de cologne, or rectified spirit, any of which, diluted with equal part of water may be applied night and morning, during the last month of pregnancy, and will generally prove successful in preventing this trouble. When excoriation or chapping has occurred, however, the best local applications are sulphurous acid or tincture of catechu, with either of which the broken surface may be lightly brushed over two or three times a day until healed. The same object may be also obtained by the local use of white of egg, by a lotion containing five grains of tannin, half as much sulphate of alum or zinc, or a couple of grains of nitrate of silver, in an ounce of rose water, to be applied after each time—care being taken to wash the nipple previous to the next application of the child. Besides this a nipple shield may be employed, which intervening between the child's mouth and the nipple, will often relieve the irritation. In many cases, however, the child cannot draw the milk through the affected nipple, and nursing must be temporarily suspended, which of itself will facilitate the cure, provided we do not allow the milk to accumulate too much—in which case inflammation may be excited, and terminate in mammary abscess.

CHAPTER XXXVII.

INFLAMMATION AND ABSCESS OF THE BREAST.

ALTHOUGH inflammation of the breast, or mastitis, as it is technically termed, may occur at any period of life, from infancy upwards, women are most subject to this disease during pregnancy, after delivery, and whilst

nursing, more especially with first children, and within the first three months of suckling.

Causes.—Under the circumstances just referred to the local irritation and congestion which takes place from the secretion of milk vary in amount. If these be within certain limits, the secretion takes place with slight feverishness for a day or two. If the local irritation be beyond these limits, the breast becomes hot, tense, and painful, and unless the usual treatment reduces this irritation, it will run on into inflammation and abscess. Exposure to cold, mental emotion, moving the arms too much at the time the breasts are thus enlarged, are all said to give rise to it. Inflammation very frequently extends itself, in cases of cracked nipples, along the lymphatics, to the deeper tissues, as already mentioned, and affects the mammary gland itself; or it may be confined to the skin and surrounding cellular substance. In the latter case, the inflamed part is equally tense; but when the glandular structure of the breast is also affected, the enlargement is irregular, and the pain often extends to the axillary glands. The secretion of milk is not always suppressed when the inflammation is confined to the integuments; and suppuration is likely to come on more quickly than in deeper seated inflammation of the mammary gland itself.

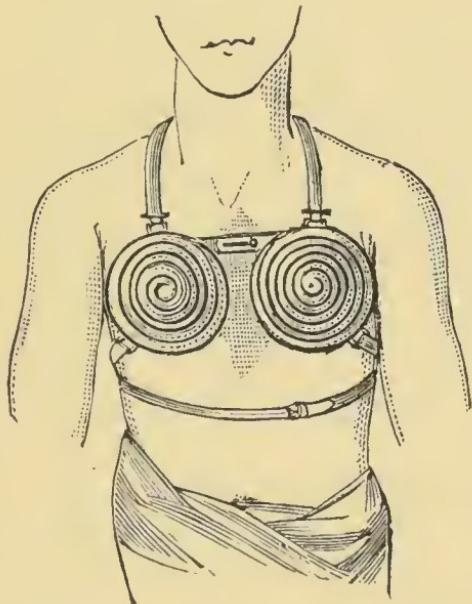
Symptoms.—The severity of the symptoms will depend upon the depth and extent of the inflammation. When the subcutaneous cellular tissue and the skin alone are involved, there will be some local pain and soreness, with a circumscribed hardness and tension and a blush of inflammation upon the skin. On the other hand when the deep fascia or gland are involved, the pain is more severe, extending to the axilla; the swelling considerable, the tension great, and the constitution suffers proportionately. The pulse is quick and full, the skin hot; there is headache, thirst, sleeplessness, etc. The skin covering the inflamed part may be of a uniform red, or red in patches. If the gland be in-

flamed, the breast has a nodulated feel, as if it consisted of several tumours. The secretion of milk is for a while suspended ; but it will take place after the acute stage has somewhat subsided. Subsequently, when the inflammation has continued some time, suppuration takes place, and the matter makes its way to the surface. This occurrence is marked by shivering, followed by rise of temperature and perspiration, and a sense of fluctuation in the tumor, which is prominent and smooth. The pointing is generally in the neighbourhood of the nipple. By degrees the intervening structure is absorbed, and the cuticle giving away, the matter is evacuated a little over the seat of its termination, or in cases where the disease has been neglected, it may burrow through the adjoining tissue, and eventually be discharged slowly and with great suffering, by one or many small openings or sinuses, at a considerable distance from its primary situation.

Treatment.—The primary *indication* is to subdue the inflammation, and to prevent the formation of an abscess. For this purpose, as a rule, the first thing you should do, in the absence of a doctor, is to give a saline purgative, such as a sedlitz powder ; and put your patient on a light non-stimulating dietary, or in other words, fall back on the slop regimen, which has been sufficiently described in the chapter on the management of the patient during the first days after delivery. Then in the way of local treatment, you should rely on warm poulticing and soothing applications, followed by smearing the breast well with extract of Belladonna, thinned with glycerine. Moderate compression and support should also be afforded to the enlarged gland by long strips of Belladonna plaster, extending across the chest, from below the breast to above the opposite shoulder, so as to lift up and relieve the weight of the congested and swollen parts. These measures are far more likely to produce the desired effect in such cases than the custom still adopted by some nurses of repeated brisk immunctions with olive oil,

the rubbing and handling thus practised being far more likely to bruise and injure the already inflamed mammary lobules and lacteal ducts, than, as was formerly supposed. For the purpose of supporting the breast in these instances, and at the same time facilitating the employment of the local applications already referred to, the very effective and simple appliance, or breast supporter, recently devised by Dr. Duke, of Cheltenham, may be advantageously employed (fig. 31).

Fig. 31.



If, however, notwithstanding all the care taken to prevent its occurrence, suppuration should take place in the inflamed breast, and a mammary abscess be formed, the only remedy is one beyond the province of the nurse, namely, its timely and complete evacuation. It is the nurse's duty under these circumstances (as in those other complications of the puerperal state, such as puerperal mania, eclampsia or convulsions, phlegmasia dolens, or milk leg, etc., which for the reason before given, need not be here discussed), is simply to act on the rule so often repeated in the foregoing pages, viz.: "send for the doctor."

PART VI.

CHILD CARE.

CHAPTER XXXVIII.

ON THE FEEDING, HYGIENE, AND GENERAL MANAGEMENT OF INFANTS.

As monthly nurse you will frequently be questioned by your patients, especially in cases where no doctor is in attendance, as to the general management and proper manner of feeding and caring their infants. And on no subjects is it more essential, that you should be well informed, for on none are erroneous views more prevalent or more serious in their effects. Hence in this place must briefly be pointed out some of the preventable causes of that appalling loss of infant life which is thus occasioned, and the methods by which this may be best obviated.

With regard to the mortality of infancy and early childhood in these countries, it has been shown that of every million children 150,000 die in the first year after birth. From the reports of the Registrars-General for England and Ireland we learn that though the average mortality of all ages is only twenty per thousand of the population, the death-rate in children under one year is one hundred and thirty-six per thousand, and in some places it has actually reached one hundred and eighty-nine per thousand. Nor does this terrible death-rate by any means represent the full consequences of the hygienic mismanagement of infancy, which are as obvious in the causation of many of the non-immediately fatal diseases by which the fairest portion of the stream of existence is too often poisoned and embittered. Thus within the last few years the proportion

of strumous and tubercular disorders brought under the writer's observation in the children's hospital, with which he is connected, has, as he has elsewhere shown, become notably increased. This fact is obviously connected with the growing indisposition to nurse their children observable in women of all classes, and also probably to some extent to the substitution of artificial compounds for the natural food of an infant.

We shall now, therefore, consider in what manner an infant should be fed and managed.

The first of these questions may be briefly disposed of. Nature has indicated in unmistakeable characters the fact, that every infant should, unless under exceptional circumstances, be nursed by its mother, whose milk, if she be fairly healthy, is a more salutary compound of suitable nutriment than it can possibly otherwise receive. For perfect nutrition four classes of food are required —viz., albuminates, fatty-substances, carbo-hydrates, and salts. These are found in the most digestible form and the most perfect proportions for the young child in the casein, butter, sugar, and salts of human milk.

Nor in this connection should it be lost sight of that the nursing mother herself generally profits hardly less as regards future health than her child from the discharge of this duty whenever it is possible. Otherwise, a wet nurse should be got for the child if there be one obtainable of unimpeachable mental and moral tone as well of sound physical health. These requirements are, however, so difficult to obtain, that, unless in the case of some delicate children who require the personal warmth of the nurse, and with whom nothing but breast milk agrees, you must therefore be generally content to allow your patients to bottle-feed their children, if they themselves either will not or cannot suckle them.

When a child is to be fed by hand its best nutriment is that which comes nearest to its natural food, the most generally available substitute for which is properly prepared fresh cow's milk. Every nurse knows that

this is richer than women's milk, and hence she imagines that the addition of so much water is all that is wanted to bring the former to the standard of the latter. Now this error cannot be too clearly pointed out. Cow's milk is not merely of higher specific gravity, or, in other words, contains a larger proportion of solid matter, but it also differs from the natural food of an infant in the character, as well as in the amount, of its constituents, containing less sugar and more insoluble casein. Hence it is less easily digested, and the resulting curd, or caseous mass, left in the child's stomach commonly gives rise to discomfort, pain, or disease. To prevent this, cow's milk should be diluted with one-third of cold boiled water, and rendered non-ascendent by the addition of from one to a couple of ounces of lime-water to the bottle, along with which a little sugar of milk and a few drops of fresh cream, if procurable, may also be added to each pint. After four or five months the amount of lime-water may be gradually lessened, and curdification effectually prevented by adding a small pinch of salt, and as much bread-soda to each bottle. If the child appears unsatisfied or is not thriving, one part of thick barley-water may be given with three or four parts of milk. This should be given by the old-fashioned boat-shaped bottle in preference to those furnished with rubber tubes, which are difficult to keep clean, and with which a child is more liable to be overfed.

For the first few weeks the child must be fed frequently, not every time it cries, as is too often the case, but at regular intervals of two or at most three hours, the interval between feeding being gradually lengthened as the child approaches the period of weaning or dentition.

To recapitulate, as this point cannot be too clearly impressed upon you, the best food for an infant, until its mother can supply its wants, or to make up for her shortcomings, is cow's milk and water, prepared as just directed; or three parts of ass's milk,

and one part of water. A new-born infant will, probably, require something about every two hours, and, surprising as it may seem, it is possible, at that early period, to lay the foundation of regular habits in this respect; accordingly you may give the baby its food every two hours, or thereabouts, unless it be asleep; either its natural food, or milk and water, with a spoon, or from a suitable feeding bottle. A little experience will show you the proper quantity to give each time and, fortunately, any little excess is remedied by the stomach rejecting the surplus. When "possiting," as it is called, occurs, or if the stomach be unusually delicate, it is better to give the child less at a time, and rather oftener. If the mother has not milk enough, or if full nursing be too much for her strength, you must supply her deficiency by feeding the infant under these circumstances; and it will be better to feed the baby at night, so that your patient may get a good sleep, and let her nurse it during the day. After a time when she is quite strong, she may reverse this, and feed the child during the day, if she cannot nurse it altogether, as the most natural, convenient, and comfortable sleeping place for the baby at night is in its mother's arms, at least for some time. As the child grows older, a change of food will be required, but during the first month the changes need be very few; whilst for infants somewhat older, we may mention, as varieties, in addition to milk or barley-water, prepared barley or groats, panada, rusks, and bread jelly. The latter is made by pouring boiling water on the crumb of bread and squeezing it out again four or five times, and then simmering it gently with a little water in a saucepan until it is thick enough to set, which it will do on cooling. A spoonful of this jelly, with water or milk, and sugar, makes a good food. Whatever food you give, take care that it is very thin. No doubt a child is "more satisfied" by thick food, just as you are after a heavy meal, but it is not a healthy way of feed-

ing for either. The most common causes of infantile disease are overfeeding and unsuitable food. It therefore cannot be too often reiterated that children are nourished by what they may digest and not merely by whatever they swallow. Hence overfed children are frequently at the same time semi-starved by the unsuitable aliments with which they are supplied.

ARTIFICIAL MILK FOODS.

At the present time artificial foods are very commonly given from the earliest period of child-life. Many of these tinned, preserved, and concentrated so-called lacteal aliments mainly consists of an admixture of various farinaceous compounds with a considerable amount of saccharine matter and a certain proportion of evaporated milk. Such articles may be handy to use and cheap, but these advantages cannot compensate for their deficiency in elements essential for child nurture. Moreover, in some instances artificial foods are actually injurious, either from the changes they undergo, when over long or incompletely preserved, or from their unsuitability for digestion, as, owing to the non-secretion of saliva in the case of infants under three or four months old, the assimilation of starchy substances is rendered difficult.

In this connexion it may be observed that tuberculosis in human beings is undistinguishable from the tubercular bovine, or cattle epidemic, known as perlueht. Moreover, those acute forms of tuberculosis which are most common during childhood, resemble closely the infective diseases in their origin from a specific virus, or germ, however generated or introduced from without. This method of infection, therefore, is not unlikely to occur more especially amongst the children of the poorer classes, amongst whom serofulous and tubercular diseases are so prevalent, and into whose dietary tinned or preserved so-called lacteal foods now enter largely. Hence, we would advise that the use of even the best of such preparations should be re-

stricted to cases in which good fresh milk is not obtainable, or to those very exceptional instances in which it does not agree with the child.

SLEEP.

Next, and of equal importance to the infant's food is its sleep. Without abundant sleep an infant cannot thrive, and the more it sleeps the better. Therefore, a nurse should make it a rule never to disturb an infant's rest for any purpose. When convenient, during the first few days, the best place for the child to sleep is the mother's bed, as it will be sure to be warm there; but if you lay it down in a cot or bassinette you should ascertain that its feet are warm, and that it is properly covered and secured against draughts. As it gets older, it will remain longer awake, of course, but you should, as far as possible, keep to regular times for sleep, and the mid-day sleep should be continued until it is three or four years old. Bear in mind, therefore, that as nature has unmistakably pointed out, infants require a great deal of repose—the first few weeks after birth being passed almost entirely in sleep, with the exception of the time occupied in satisfying the instinctive calls for food; and even as they gradually grow older throughout the whole period of childhood more sleep is required than in adult age. In awaking a child, care should be taken to do so gradually and gently, otherwise much injurious excitement may be produced.

HYGIENE OF INFANCY.

Hardly less important than its dietary and sleep, is the personal cleanliness of the child and its surroundings, such as the nursery, etc. Every child should be thoroughly tubbed once or, preferably, twice a day. If the latter, the evening bath, should always be warmer than the morning one, which at first should be fairly warm, and gradually reduced in temperature as the child grows stronger, until it can be given cold in

summer and tepid in winter. If the child be puny a handful of sea salt should be added to each bath, and in every case it should immediately after the bath be gently rubbed with a soft Turkish towel until the skin is aglow. Believing in the great importance to the infant of the most perfect possible degree of personal cleanliness, we may here warn our readers against that too common "rough and tumble" cleanliness which consists in putting on a clean frock over soiled petticoats, or a clean pinafore over a dirty frock ; and insist on that minute cleanliness of a child's person, and of its inner as well as its outer garments, which ought to be the aim of all good nurses. An infant, as we may repeat, should be washed most carefully, after being fed, every morning, and in a slighter degree in the evening, and its dress entirely changed each time. The water should be pleasantly warm, and soap will rarely be necessary; but if required some super-fatted antiseptic soap, such as Vinolia or Old Castile soap, is the best. A soft fine sponge or flannel should be used, and the operation performed with gentleness and quickness. Take care that all the creases and folds of the skin, and every part of the body which comes in contact with another part are cleansed, as neglect in that respect will surely lead to scalding and chafing. Subsequently the child must be thoroughly dried with a warm soft napkin, and all the creases well powdered. For this purpose fine starch or boric acid powder is generally used ; and answers the purpose well, though there is a still better powder, called "Lycopodium," or puff-ball powder, which may be obtained from the chemists. If a part be thus dusted, water will pass over without dissolving, or washing it off, or wetting the skin. You will find this powder most useful with what old women call "soft children," who are scalded, more especially when the buttocks or groins are affected.

When washing and dressing are finished, the child is generally ready for a sleep, in which it should always be indulged. A very careful watch should be kept

upon the natural evacuations, so as not to allow them to remain in contact with the child longer than you can help. Most of the cases of chafing and scalding we meet arise from the nurse's neglect in this particular. No napkins that have been soiled should be used again before being washed; and before applying them, you should see that they are thoroughly dry, soft, and warm. After each movement of the bowels, the infant should be sponged, dried, and dusted, and the latter always after passing water. In these operations also, it is curious how early regular habits may be acquired. After a month or two, a baby will quite understand what it is "held out" for, and such habits promote health as well as cleanliness.

In case despite all your care, a child should chafe, and become sore; you must bathe the parts very gently, with milk and water, and dry them carefully, two or three times a day, and dust them with either boric acid or lycopodium powder. Should the excoriation be not thus removed you may try a lotion of sugar of lead (five grains to an ounce of water), or of the sulphate of zinc (white vitriol), four grains to an ounce of distilled water; applying either, after washing and drying the part. If you employ these lotions remember that they are poisonous, and be careful where they are kept, and also that they are properly labelled. If, under this treatment the abrasions do not heal in a few days, the family doctor ought to be consulted.

EXERCISE.

Little need be said on this point, as during infancy the child will be sufficiently exercised by the movements of its nurse, in whose arms it should be carried for the first year, and never allowed as is commonly the case to shiver or roast in the perambulator at the caprice of the attendant.

THE NURSERY.

To a large extent the health of children is dependent on the sanitary condition of their nursery, which whenever possible, should consist of two rooms—one for day, the other for night, and should be the most sunny, spacious, and best ventilated, of all the rooms of the house. It need hardly be added that there should be no gas in the nursery or any water-closet adjoining it.

Special attention should always be given, as far as circumstances permit, to the lightsomeness or free exposure to sunshine of the nursery, as the development and health of children are greatly influenced thereby. Thus the physical deformities and tendencies to strumotuberculous disease, here so commonly observed amongst children, are comparatively infrequent in those sunnier climes with which a large and varied experience has made the writer familiar. To the want of sufficient insulation in this country is mainly due the pallid, sallow aspect and stunted physical development, especially noticeable in our town-bred children, to whom too frequently

“The goodly light and air
Are banned and barred—bidden fare.”

In fact, the influence of sunshine on the sanitary and physical condition of the young may be tersely summed up in the old proverb—“Where the sunlight does not enter, the doctor must.”

Having said so much about food and hygiene let us retrace our steps a little. Very little physic, as a rule, will be necessary for a new-born infant, after the first dose ; and the less the better. Until the dark green stools (*meconium*) have passed off, and the discharges become yellow, the child is apt to be griped and uneasy, but this will only last a day or two ; the mother’s milk will then be coming, and that, at first, acts as a gentle purgative, so that the bowels will gene-

rally be moved three or four times a day, which will be sufficient. You are not to think it your duty, however, to give the child medicine if it do not come up to this standard ; nor are you to remedy too great frequency by unnecessarily dosing it with castor oil : in such a case you should ask the medical attendant for a prescription. Remember that to a young infant a purging is more serious than a slight costiveness. In addition to castor oil, the only medicine for the infant of which a nurse should have command (unless ordered by the doctor) is essence of fennel, of which two or three drops may be given mixed with water, if the child suffers from flatulence. Avoid all tampering with stronger medicines than those just mentioned, or you may incur a very serious reproach, as has happened to many a nurse who, either from carelessness, or a wish to relieve the child, has given some of those popular carminatives containing a small quantity of laudanum, which too often produce that sleep which knows no waking. No doubt young infants suffer from flatulent pains, and make their sorrows heard, but you are not at once to conclude that they need physic; a little fennel water, a teaspoonful of very weak wine and water, warming the feet, a hot flannel to the stomach, or a warm bath, will almost always afford relief. When a child cries violently, without apparent reason, it is not a bad plan to see if the point of a pin be not the cause. And if simple means do not afford relief in a reasonable time, you ought to send for the medical attendant without delay. One of the objects of this book is to make it clear when you ought to demand assistance, and this is a case in point. By candidly acknowledging what is beyond your province and skill, you will be entitled to more of the confidence and respect of those who employ you than by pretending to greater knowledge than you possess, or assuming a responsibility which may be disastrous to your patient and yourself.

PART VII.

GYNÆCOLOGICAL NURSING.

CHAPTER XXXIX.

ASEPSIS AND SANITATION IN GYNÆCOLOGICAL NURSING.

A PRIMARY duty in gynæcological as well as in obstetrie nursing is the exelusion as far as possible of all miero organie and other sourees of infectious disease from our patients. For this object not only should the nurse observe the most serupulous attention to perfect cleanliness, or asepsis, personally, as well as in everything appertaining to those under her care, but should also be conversant with the method of using the various anti-septie or germicide agents she may be directed to employ for the prevention or treatment of septicæmic disease.

Bacteria.—In the present chapter we shall, therefore further put before you a brief summary of some recently accepted views concerning the microbes, bacteria, or other organie germs by which infectious disorders may be propagated. Such micro-organisms all belong to the lowest forms of vegetable life, being unicellular structures, of which the two, pathologically speaking, most important are, firstly, those consisting of round cells, or "cocci," and, secondly, those in which the cells are cylindriical, as in "baceteria" and "baceilli." Whatever different forms, however, these micro-organisms may assume they all tend to multiply with astonishing rapidity and assimilate nourishment in the media in which they live. Bacteria living on dead matter encounter, of course, no living resistance, whilst those feeding on living tissues, or fluids therein, meet the living cells of the body, and

have to combat them. The rôle of microbes in the world is complex and necessary, though many are, as just stated, specifically injurious. They act as scavengers, returning to the air and water the organizable elements abstracted daily by the vegetables of the globe, and indirectly by animals, and indispensable to life. With regard, however, to the more deadly bacteria or bacilli, by which the different forms of infection are developed, it may be observed that the source to which their entrance into the human system is generally traceable is septic or putrid matter or dirt. To exclude the latter is therefore to exclude also the former ; the spontaneous generation of bacteria or any other living organisms being equally opposed to the teachings of science and the dictates of common sense.

Besides these bacteriological or immediate causes of infectious diseases, there are, moreover, other circumstances or predisposing conditions, such as debility from previous ill-health, or poverty of diet ; extremes and sudden variations in the temperature and moisture of the atmosphere, ill-ventilated, dirty, sunless, ill-lighted habitations, and, above all, defective sanitary arrangements or sewerage, which must also be taken into account, and, as far as is feasible, guarded against in the prevention of such diseases.

In this connection it is necessary that you should know that, as Dr. Byers has also shown, the cells of the human body in addition to their ordinary properties of growth, reproduction, and assimilation, possess moreover inherent powers for discriminating between natural and foreign substances in the economy, and that they seize up, and as it were, devour the former, and cast off the latter. In order to do this, however, and keep the system protected from the invasion of noxious substances, the cells must be sustained at the normal standard of healthy action by suitable nutrition and hygenic influences, since if they be depressed by the presence of predisposing conditions they are

unfit to cope with their micro-organic enemy, and they perish.*

The practical conclusion which we desire to impress upon you, from what has been just said, is the importance of your striving, as far as possible, to preserve the patients under your care, as gynæcological nurses, from septic infection, or contagion during the course of recovery from any uterine, or other local disease or operation, by maintaining their general constitutional health at the highest possible level. This can only be accomplished by the suitable and generous nutrition of such patients ; secondly, by the avoidance of all depressing mental influences ; and, thirdly, above all by untiring attention to the hygienic surroundings, or sanitation of those under your care. Thus, if you have any voice, as you should have, in this matter, it will be your duty to urge patients about to undergo gynæcological operation, or treatment, to select a bedroom apart from any communication, in the way of bath or closet, with the sewerage of the house. That room should, moreover, be large, well ventilated, sunny in aspect, devoid of window curtains or hangings, and clear of all superfluous furniture. No corner press, nor other dwelling place for dirt should be suffered to remain uncleared. All utero-vaginal, and other discharges should be received not on linen napkins, but on wood-wool diapers, whilst sponges must be replaced by pads of the same material, which should in like manner be burned immediately after use. Lastly, the excrete from bowels or kidneys should be received in vessels containing solution of chloride of lime, and immediately removed from the patient's room.

* *Vide Article "Prevention of Disease," by J. W. Byers, M.D., in Dr. Keating's Cyclopædia of Diseases of Children, vol. iv., p. 335, Philadelphia. 1890.*

CHAPTER XL.

USE OF THE CLINICAL THERMOMETER IN GYNÆCOLOGICAL AND OBSTETRIC NURSING.

THE necessity of close attention to the temperature of the patient is especially obvious in gynæcological as well as in obstetric nursing. In such cases the clinical thermometer, when properly used by the nurse, may afford that timely warning of the inception of pyrexial, or infectious disease, which enables the medical attendant to take effective means for their arrest or treatment. A brief recapitulation of some now generally accepted views with regard to the use of the clinical thermometer must therefore be included in this "Hand-book of Obstetric and Gynæcological Nursing."

Normal Temperature of the Body.—According to Professor Bäumler of Freiburg (of whose views the following observations are a summary), the normal temperature of the body, when measured in the axilla, is about $98\cdot6^{\circ}$ Fahr. inside the mouth underneath the tongue, it is almost the same, whereas in the vagina or rectum it is $0\cdot3^{\circ}$ to $0\cdot6^{\circ}$ higher. Under special circumstances—for instance, when a considerable cooling of the surface takes place, or when the skin freely perspires, or when the circulation has been influenced by exercise, food, or stimulants, the difference may be much greater between the temperature of the skin and the interior. Of considerable influence upon the surface temperature, is the amount of fat in the subcutaneous tissue; moreover in very obese subjects the surface may be considerably colder than the interior, which is probably caused by weakness of the heart's action.

The temperature of the body is not the same all through the day, fluctuating from about $1\cdot8^{\circ}$ to $2\cdot3^{\circ}$ Fahr. in the course of the twenty-four hours; the mercury standing lowest between 2 A.M. and 6 A.M., and then gradually rising until it reaches the highest point between 5 P.M. and 8 P.M.

This daily fluctuation of the body-heat is a fact of fundamental importance, for it not only takes place in health, but also, when, in disease, the whole range of the temperature is either depressed or abnormally elevated.

Age has also a marked influence on bodily temperature, which in infancy and early childhood is slightly higher than later on, and is moreover then wanting in that steady course of the daily fluctuation which is observed in adults. In old age again, the range is a little higher and more fluctuating than in adult life. No appreciable influence on the temperature in association with menstruation or pregnancy can be observed in healthy women. Parturition slightly increases the temperature, evidently by the increased muscular action, an increase which is compensated by a corresponding fall after the birth of the child. If no complications occur, the temperature in the puerperal state generally does not deviate from the normal.

Abnormal Temperatures.—The temperature of the patient may deviate from the normal standard, either by a marked decrease as occasionally observed in obstetric practice in collapse in the last stages of puerperal septicæmia and metro-peritonitis. It may also be abnormally altered in obstetric, in gynaecological, as well as in general nursing by a preternatural rise of bodily heat, which is indicated by the clinical thermometer, in even the earliest stages of all pyrexial, or febrile and septicamic diseases. In the latter this increased production of heat, is the effect of the presence in the blood of some foreign substance, acting injuriously on the nervous system, and causing altered vital chemical processes. Modern theories give a more prominent part in these actions to organised bodies (bacteria), which, in themselves, or, by the changes they cause in the fluids of the body, are assumed to be the cause of the febrile process, and thus of the increased temperature; which, however, as some more recent authorities hold, should be regarded

rather as the method by which the destruction and elimination of the micro-organic causes of infectious disease may possibly be ultimately accomplished in such cases.

Be this as it may, however, it will suffice for you to know that, as Professor Bäumler points out, all and even slight deviations from the normal temperature of the body, unless of a very transient nature, or brought on by evident external causes, should be taken as a sign of disease. Such deviation may be of a variable degree, along with symptoms which, in part, are the consequences of the abnormal temperature, such as an abnormal rate of pulse and respiration, and nervous symptoms. The whole range of deviation within which life can well be maintained is comprised between 93° Fahr. (32.3° C.) and 110° Fahr. (43.4° C.). A temperature approaching either end of this range indicates a condition of extreme danger, which is already great with a temperature of 95° Fahr. (35° C.), or beyond 106.5° Fahr. (41.5° C.). With reference to the general condition of a patient who presents an abnormal temperature, a few distinctions may be thus conveniently tabulated :—

1. *Temperature below the normal* :—

- a. Temperature of collapse, below 97° Fahr. (36.2° C.).
- b. Subnormal temperature, 97-98° Fahr. (36.2-36.7° C.).

2. *Normal Temperature* : 98.0-99.5° Fahr. (36.7-37.5° C.).

3. *Temperature above the normal* :—

- a. Subfebrile temperature, 99.5-100.5 Fahr. (38.5-38.05° C.)
- b. Febrile temperature of moderate degree, 100.5-102° Fahr. (38.05-38.88° C.), morning ; 102.2-103° Fahr. (39°-39.44° C.), evening.

c. Febrile temperature of high degree, 102·5° Fahr. (39·2° C.), and more in the morning; 105-106° Fahr. (40·6-41·1° C.) in the evening.

d. Hyperpyrexia, 105·8-107·5° Fahr. (41-42° C.), and more. Extremely dangerous.*

Simulation of High Temperature by Hysterical Women.—In this connexion it is necessary to warn those nursing gynæcological cases, in which so many patients are hysterical or neurotic subjects, against the occasional simulation of high temperature, which, as our colleague Dr. Nixon observes, are “sometimes practised to elicit sympathy or attract attention. Patients may rise the mercury in the thermometer by rubbing the bulb between the folds of the night-dress, or the instrument may be held with the bulb upwards, and the index shaken to a high degree; or it may be placed in contact with warm poultices, hot water-jars, etc. A very high temperature, without a corresponding rise in the rate of the pulse, should be looked upon with suspicion.”

Methods of taking temperature.—With regard to the various modes of employing the clinical thermometer in gynæcological and obstetric cases, the general directions given by the same author in his valuable “Handbook of Hospital Practice”† should be followed by the nurse. “The temperature,” he says, “is taken ordinarily in the axilla, or in the mouth, rectum, or vagina. When taken in the axilla, the armpit, if perspiring, should be dried, and the bulb of the thermometer introduced below the anterior border of the axilla: the arm is then brought closely to the side, the forearm being bent and carried across the chest,

* *Vide* articles, “Temperature,” and “Clinical Thermometer,” in *Quain’s Dictionary of Medicine.*”

† “A Handbook of Hospital Practice and Physical Diagnosis,” by C. J. Nixon, M.D., F.R.C.P.I., etc., p. 12, Fannin & Co., Dublin.

the hand grasping the opposite elbow. This position converts the axilla into a closed cavity ; so that its temperature is slowly raised to that of the interior of the body. The time taken for an observation (unless the more rapid but more fragile minute thermometer be used) is usually five minutes. When the temperature is taken in the mouth the bulb of the thermometer is placed under the tongue, or between the cheek and gums, and the lips are kept closed. In taking vaginal temperature place the patient on her side, introduce the thermometer well within the passage, and keep it therewith one hand whilst the other rests on the patient's hip to prevent any sudden movement by which the instrument might be broken."

In every case, therefore, whether gynæcological or obstetric, the patient's temperature should be carefully taken by the nurse at a regular hour each morning and evening, with a reliable clinical thermometer, the index of which has been previously shaken down a couple of degrees below the normal temperature mark, and the result immediately registered in a proper clinical chart. The marks or dots by which this is done should then be connected by lines, so as to form curves, by a glance at which the doctor will be enabled to draw his conclusions as to the condition of the patient. On the same chart may also be recorded the number of the respirations, rate of pulse, and other symptoms, or particulars concerning treatment or dietary in each case.

CHAPTER XLI.

GYNÆCOLOGICAL EXAMINATION.

IN most instances gynæcological diagnosis, or the recognition of complaints peculiar to women, can only be arrived at by a properly conducted local "examination" or direct investigation into the physical condition of the parts concerned. Thus if the uterus or its

appendages, or the contiguous organs be the suspected seat of the disease this must be ascertained by the doctor in the way just mentioned. When that has been determined on it will then be your business as a nurse to make the necessary preparations and arrangements in the following manner :—

1.—*Before Examination.*—Sometime before the hour appointed for the physician's visit you must take care that the patient's bowels, if not already naturally evacuated, are well cleared out by a purgative enema, and also that immediately prior to his arrival the bladder should be similarly emptied, either naturally or by the catheter. After this the patient should be suitably clad in a loose flannel drawers and vest, wrapped in her dressing gown, and then assisted on the couch.

2.—*The Couch, or Examination Table.*—For this purpose it matters little what special form of couch be employed, provided it be not only sufficiently high to enable the examination to be conducted without inconvenience to the surgeon, and so narrow as not to permit the patient's moving away from the required position, but also so placed as to allow of the fullest possible access of light to the parts under examination.

On the same side, and immediately behind where the doctor will stand, the nurse should have arranged a small table, upon which the surgeon can place the special instruments and appliances which will be necessary.

3.—*Position for Examination.*—As to the position of the patient, it should be observed that although in some cases the dorsal or back decubitus position may be required, in the great majority of examination cases what is termed “the left lateral position” is preferred in these countries, and has many advantages on the grounds alike of affording greater convenience for the examination, and of being more consonant with the proper sense of modesty of our patients, a consideration which should be as much respected by the nurse as by the doctor.

To put the patient then in that semi-prone lateral position, all that is necessary is that you should place her on the left side, with legs bent on the thighs, and these again flexed on the abdomen. Her left arm should be brought round behind the waist, and the body well rotated downwards and forwards, whilst her hips will then project over the opposite edge of the couch or bed, on which she should lie without a pillow, and covered by a light blanket or shawl.

4.—*The Nurse's Duties during an Examination.*—In assisting at a gynæcological examination you must always be ready to carry out the doctor's directions. Your place should be on the opposite side of the couch to his, so as to keep the patient steady, and to lift her thighs or nates if required, or else you may stand on the same side and behind him, so as to support or hand any instrument he may direct.

When the examination is concluded you should have warm water, nail-brush, and soap in readiness for the doctor to wash his hands, and whilst he is so doing you may occupy yourself with the cleaning and drying of the instruments that have been used.

CHAPTER XLII.

APPLIANCES AND INSTRUMENTS FOR ORDINARY GYNÆCOLOGICAL EXAMINATION.

ONE of the duties of a nurse in this department is to make sure beforehand that whatever is generally necessary for gynæcological investigation or operation shall be in readiness in the proper place and condition for use when needed. Before such examinations, therefore, in the hospital with which we are connected, the nurse on duty is required to see that the following things are duly prepared and arranged in the examination room, viz.:—1, an abundant supply of hot and cold water, clean towels, and two or three basins; 2, thymol soap and nail-brush; 3, a large tin vessel for refuse water,

etc., under couch ; 4, properly labelled glass jars of carbolic or boric acid solution, or whatever other antiseptic solution may be preferred by the doctor ; 5, two or three porcelain trays for his instruments ; 6, vaginal syringe, uterine-douche, and catheter ; 7, clean sponges, cotton or wood-wool ; 8, carbolized vasaline, glycerine, and turpentine ; 9, aromatic spirits of ammonia, brandy or, some other stimulant.

Whatever special instruments are required in any case must be seen to and directed by the doctor, but for ordinary gynæcological examinations, in our hospital for instance, the nurse is expected to have in readiness the instruments most commonly employed in such cases, viz., specula, cylindrical expanding, or bivalve, and that which we ourselves almost invariably use—the duck-bill speculum ; the uterine sound ; a vulsellum and tenaculum for drawing down uterus, as well as a curette. Besides these, half a dozen wire probes armed with cotton, for removing uterine secretions and applying caustics, such as carbolic and cromic acids, iodized phenol, etc., should also be kept at hand.

In addition to the foregoing appliances that are commonly required in ordinary cases, the nurse should previously obtain the doctor's directions as to other appliances or instruments that may be specially needed in any case. These ought to be arranged on a small table beside the bed or couch, so as to be within easy reach of the surgeon. She should, moreover, make it her business to see that all the instruments or appliances which may be thus used, are not only thoroughly clean as far as they can be rendered so by scrubbing with hot soap and water and nail-brush. But secondly, that this asepsis should be further maintained as much as possible by immersion in the antiseptic solution already referred to in suitable trays or vessels, from which they should be taken only when required by the doctor. Before touching any of these articles, or the patient, the nurse should be most sedulous that her own hands have been

thoroughly cleansed by scrubbing with carbolic soap and hot water by the nail-brush. After the operation or examination, whatever has been thus used must be immediately similarly cleaned, and then well dried.

Sponges.—With regard to sponges, for ordinary purposes, these are so difficult to keep aseptic by any amount of washing, or by any antiseptic solution, that they may be replaced by pledgets of wood-wool, or carbolic gauze, which when used can be thrown away. But for abdominal and many other operations they cannot be thus dispensed with, and in such cases the nurse must take care the sponges used in each case are new, soft, and rendered asceptic by washing in successive waters until thoroughly clean, and then soaked in carbolic solution.

CHAPTER XLIII.

THE VAGINAL SYRINGE ; ITS USE AND ABUSE.

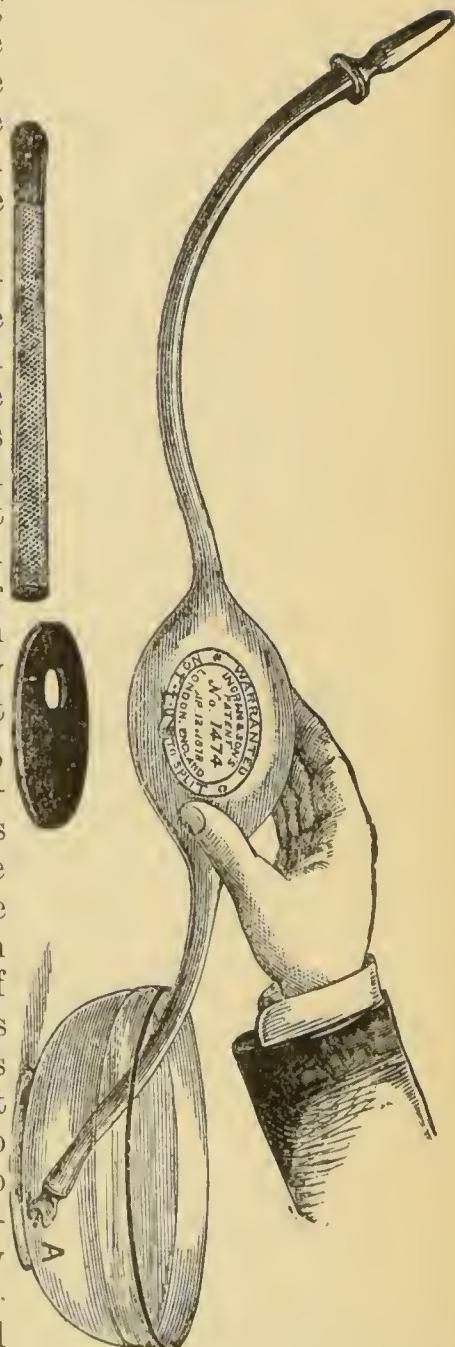
To many of our readers any details with regard to the use of an appliance in such universal vogue with women of all classes as the ordinary vaginal syringe may possibly seem superfluous. Nevertheless, as the writer in the course of his experience has met with numerous proofs of the fact that some otherwise well trained nurses are either very ignorant or very careless concerning the ill effects of misuse or abuse of the syphon vaginal syringe, a few observations must be here appended in reference to this when properly employed, indispensable, and valuable instrument.

The Use of the Vaginal Syringe.—In the first place, therefore, every nurse should bear in mind that the ordinary syphon syringe or Higginson's syringe (fig. 32), should be restricted to the purpose for which it was originally designed, namely, for vaginal injections of hot or cold water, or of such medicated fluids as she may be directed to use. Secondly, that in such cases, the

bed having been previously protected by an overhanging water-proof sheet, and the patient placed in suitable position, the syringe may be used either in the left lateral or semi-prone, or else in the dorsal decubitus.

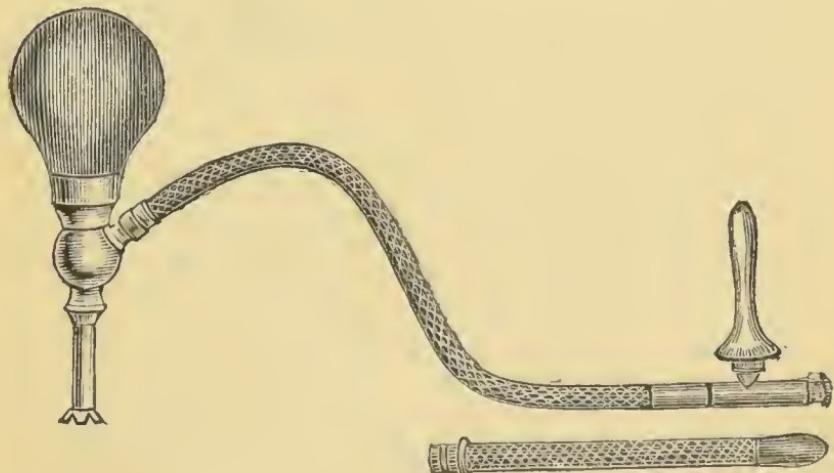
Syringing in Lateral Position.—This being the method commonly employed in our hospital, may be here first described. For this purpose the patient should be directed to lie on her left side across the bed, with her knees drawn up, and her head off the pillow, in such a position that her hip may project well over the right hand side of the couch, underneath while a sufficiently capacious vessel is to be placed to catch the escaping fluid. The nurse taking in her lap a basin holding at least a quart of the prepared injection, sits down facing the patient's perineum, and, having first filled the syringe so as to allow no air whatever to remain therein, she separates the labia and gently introduces the nozzle, previously oiled with carbolized vasaline, upwards and backwards, into the vagina, and then by alternately compressing and relaxing the ball of syringe, slowly and gradually injects the required

Fig. 32.



amount of fluid. During this procedure she must never allow the sinker of syringe to leave the water, otherwise air will be pumped up. Moreover, whilst syringing should she hear any gurgle in the tube she must instantly withdraw this and expel the air before she resumes injecting. Nor for the same reason should she ever completely empty the basin during the process. By some, however, the following older form of syringe is preferred, and may be similarly used.

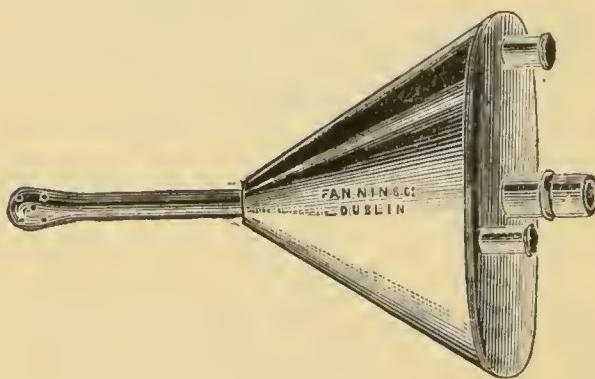
Fig. 33.



To Use Syringe in Dorsal Position.—The procedure is exactly similar to that just described, save that the patient is to be placed on her back, or in semi-sitting position on a bed-pan in centre of bed, or preferably on a rubber slipper bath with an exit tube attached, by which the returning fluid is conducted directly into a vessel underneath, so as to avoid all risk of wetting the bed and messing the patient. For this object we would recommend you to provide yourselves with the new form of vaginal irrigating tube (fig. 34), described by Dr. Duke, of Cheltenham, and manufactured by

Fig. 34.

Messrs. Fannin, of Dublin, the advantages of which may here be cited from his description of this instrument:—



"It is almost an impossibility with the ordinary means at our disposal to wash out the vagina or uterus while the patient is in the recumbent position without wetting either the bed or couch on which she lies. It will be generally admitted that the principal value of a vaginal lavement will be lost if not administered while in the recumbent position, that the appliance illustrated will be found in every-day practice to supply a want to obstetrician and gynaecologist, as well as to the nurse. By the use of this simple form of irrigator tube all wetting of the bed and patient will be avoided, whether used by the patient herself or employed by her attendant. The usual preliminary alteration of the patient's position, bringing hips to edge of bed, waterproof sheets, etc., can all be dispensed with. The appliance consists of an ordinary funnel through which a vulcanite or glass tube passes, which can be shortened or lengthened at will. This tube with apex of funnel is to be introduced into vagina (the former having been previously filled with water), both are now pressed firmly into the passage and held in

close contact with the vulva. The lavement is then to be administered in the usual way, either by syringe or douche, and if the funnel be properly held, the return eurrent cannot possibly escape except round the tube into the apex of the funnel in vagina; and so finds its way out of exit pipe, on side of same, to which tubing may be attaeahed leading to vessel underneath the bed."

Dangers from Abuse of Vaginal Syringe.—These are mainly local injury from violence or misdireetion in introduction of vaginal tube ; and seeondly,—the graver ill effects that may possibly be oeeasioned by undue force in propulsion of the fluid, or from injection of air into the uterus. Before referring further to these dangers we may repeat that the ordinary syringe should never be employed for any intra-uterine injection, if an irrigator can be obtained. More espeeially its use in that way should be avoided in all eases where the uterus must be washed out shortly after parturition. Under such circumstances intra-uterine injections with the syringe are (in contradistinction to flushing with the irrigator) fraught with dangers that have been already referred to, but whieh cannot be too often reiterated, or too strongly impressed on the minds of, not only nurses, but of women generally. The dangers and ineonveniences, as we have before mentioned eonneeted with the employ-
ment of the ordinary syringe, espeeially when used for intra-uterine purposes, are the following :—Firstly, for instance, the injection of air ; seeondly, the production of metro-peritonitis from undue foree in its use ; thirdly, the risk of thus driving the injected fluid through a patulous Fallopian tube into the peritoneal eavity, or through the dilated uterine sinuses, in reeent cases of subinvolution, into the eirculation, and so eausing sudden death from embolism. Notwithstanding all these drawbaeks, however, the vaginal syringe still holds a prominent place in the obstetrie *armamentarium*. Moreover, to the present day, that instrument is still popularly regarded as an almost indispensable adjunct in the treatment of nearly all the diseases peculiar to women,

and is employed by most patients as well as by some nurses without any special caution or apprehension of possible mischief therefrom.

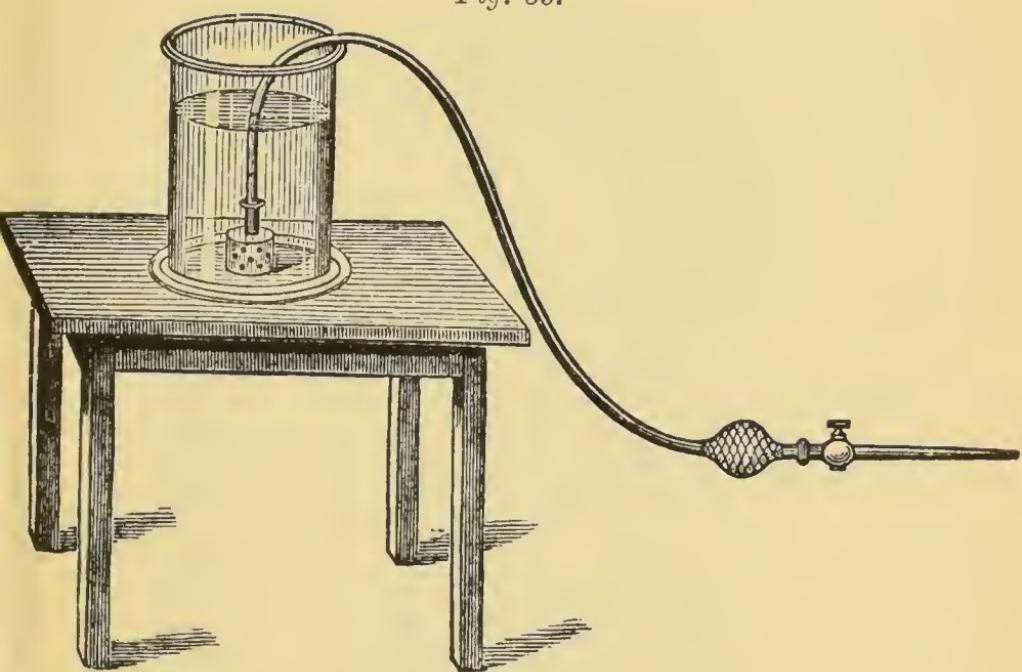
CHAPTER XLIV.

UTERINE IRRIGATION OR DOUCHING.

HAVING, in the foregoing chapter, sufficiently indicated the uses of the vaginal syringe as well as the dangers that may arise from its intra-uterine mis-employment, we shall now describe the method by which douching, or washing out the womb may, when necessary, be more effectually as well as more safely carried out, viz., by the judicious use of a suitable uterine douche or irrigator, of which various forms are now available. To one of these the present writer first called attention many years ago in a communication to the Dublin Obstetrical Society, in the *Transactions* of which for 1873 may be found a sketch of the irrigator, which he then suggested as a substitute for the ordinary syringe in all cases, and which he still thinks possesses the advantages of greater simplicity of form, convenience, and facility in employment, and efficiency in its action, over other instruments of a similar kind for intra-uterine use.

Method of Using Uterine Irrigator.—This instrument as shown by the following illustration is simply a long syphon or bent tube of elastic material, intersected by a valved ball, to the shorter end of which is affixed a metal sinker which close to the opposite extremity terminates in a grooved vulcanite uterine nozzle with a stop-cock. The shorter branch being immersed in a vessel containing hot water, boric, or other antiseptic solution, which is to be placed on a table or elsewhere near the patient's bed, and above its level, the ends are closed and the tube filled with fluid by compressing

Fig. 35.

*More Madden's Uterine Irrigator.*

the ball near the uterine attachment, which is to be very cautiously passed through the os uteri. Then no further pumping is necessary, as the fluid will flow in a gentle continuous stream until the vessel is emptied, before which, however, the flow should be arrested by turning the stop-cock of the tube, so as to prevent the ingress of air which might otherwise take place, with the injurious consequences before referred to. Moreover it is also essential before introducing this or any other irrigation tube into the uterus to make certain that the os is sufficiently patulous to allow the free escape of the fluid from the uterine cavity, for which purpose the nozzle of the irrigator should be well grooved longitudinally, or enclosed in a wire cage, as shown in the annexed illustration of Duke's appliance, adopted for this purpose. Figure 37 which represents an enlargement of the nozzle, showing method in which it is caged.

Fig. 36.

*Leiter's Portable Irrigator.*

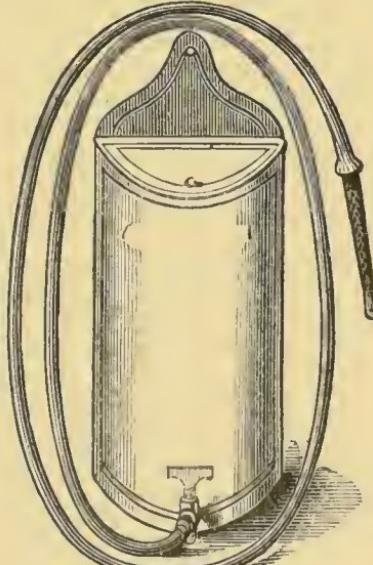
Advantages of Uterine Irrigation.—With reference to the advantages of the irrigator for intra-uterine purposes over the ordinary syringe, you should bear in mind the necessary inefficacy of the latter instrument in cases for instance, where it is desired to flush out the uterus for the prevention, or in the treatment of puerperal septicæmia, or for the arrest of hæmorrhagic

Fig. 37



discharges, or in the treatment of endometritis, and other morbid conditions of the endometrium. In such cases the one remedy, the utility of which in every form of chronic, inflammatory, or congested disease of the uterus, as well as for the arrest of hæmorrhagic discharges therefrom, and in the prevention or treatment of puerperal fever, is frequent and long-continued hot water douching or irrigation, either for the purpose of inducing contraction of the uterine vessels, or for cleansing the uterine cavity and improving the condition of the endometrium. There are many apparatus specially designed for this purpose, the following illustration (fig. 38), represents one of the simplest,

Fig. 38.

*Uterine Douche.*

and most generally used patterns. As to the method by which these intentions may be carried out, there is, however, an unfortunate discrepancy between the practice commonly adopted, by the misuse of the syringe, and that which should be employed,—namely, the use of some one or other of the many forms of suitable irrigators, of which, besides that just described, there is an abundance.

Without further reference, however, to the dangers that may attend the use of the syringe, its ineffectiveness in the treatment either of endo-uterine disease or of haemorrhage from the uterus should also be borne in view. In such cases, to produce any permanently beneficial effect from the local application of hot water, it is obvious that this must be kept in contact with the uterine surface for a considerable time, and be applied with uniform force and at a uniform temperature on each occasion. None of these intentions can be carried out by the use of an ordinary syringe, whilst all of them may be obtained by the employment of a suitable irrigator, by which a gentle continuous stream of water may be readily conducted, at any desired temperature, and for any required time, into the uterine cavity.

CHAPTER XLV.

HOW TO USE THE CATHETER.

In few respects is the difference between a well-trained nurse and one who is incompetent for her duties better exemplified than in the facility and quickness with which the former may introduce a catheter when required, without occasioning pain or exposing the patient, as contrasted with the bungling, painful, slow, and oftentimes indelicate manner in which this simple operation may be attempted by the latter.

Position of the Urethral Orifice.—Before passing the catheter the nurse must bear in mind the before-given description (*vide p. 22*) of the anatomical position and relations of the external opening and course of the female urethral passage. The latter, as we may here remind you, is situated just within the upper part of the external orifice, or commissure, of the vagina, below the clitoris, leading into the duct of the urethra. This is a membranous canal, about an inch or an inch and a-half in length, dilatable, and directed obliquely

before backwards, and from below upwards, running from under and behind the symphysis pubis, from which it is separated by loose cellular tissue; whilst internally it opens into the bladder. Its direction is subject to variation; during pregnancy, the bladder being carried upwards with the uterus, the urethra curves under the pubic arch, and then ascends perpendicularly, as also occurs when the uterus is enlarged from other causes. In prolapse of the pelvic viscera its course is reversed. These changes should be borne in mind when catheterism is required.

Method of Introducing Catheter.—In ordinary cases this operation presents no difficulty, and may be thus performed without any exposure. The patient being placed on her back, and the labia separated, the point of the forefinger of the left hand should be introduced just within the orifice of the vagina, so as to press slightly its upper edge; the catheter should then be passed along the inner surface of the finger, until it reaches the vestibulum, near the entrance of the vaginal opening; when there, a very slight movement will cause it to enter the meatus urinarius. Or the patient may be placed on her left side, in the ordinary position for labor, and the finger carried from behind forward to the vestibulum; the catheter should then be passed along the finger, in the direction of the axis of the outlet, and, on reaching the vestibulum, a slight movement will detect the orifice. The operation is more difficult when the parts are swollen or distorted, as happens occasionally from disease, as also during pregnancy or labor, and after delivery. Under such circumstances if we cannot detect the orifice by the touch, we must, of course, use a light; and then, for obvious reasons, it is better that the patient should be placed on her side.

Asepsis of Catheters.—Whilst every instrument or appliance in the sick room should always be kept as thoroughly clean, or aseptic, as possible, this is more especially necessary with regard to catheters, vaginal

syringes, or irrigators, through a negleet of such pre-caution in the use of which disease is often directly communicated from patient to patient. As a rule, the same elastic catheter, or vaginal tube, should not be used for different patients, but if that be unavoidable, and, indeed, in every ease after the use of such appliances, the nurse may at least strive to minimize the danger of their being made the medium for transmission of infection by thoroughly washing the instruments immediately after use, first in hot water, and then in sublimate solution. Transparent celluloid vaginal or uterine tubes are specially useful in the avoidance of lurking sources of sepsis, whilst the more fragile glass tubes, recommended by some authorities, though similarly advantageous, are far too fragile for practical use, and hence should not be employed by either nurse or patient. In gynaecological cases generally, however, a full-sized gum elastic male catheter, No. 9 or 10, answers better, and is more easily introduced, than the shorter female catheter of any material. Of the former catheters those, the body of which is made of Belfast linen, coated with gum elastic, and the points of which are solid, are preferable to any others, as less liable to break or afford lodgment for septic matter.

CHAPTER XLVI.

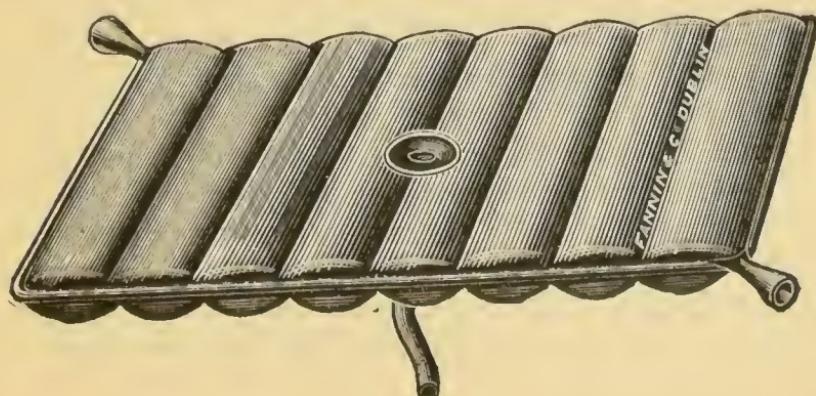
THE DUTIES OF THE NURSE IN ABDOMINAL OPERATIONS

IN no instance is the assistance of an expert, reliable, and conscientious nurse, more essential to the surgeon than in the ease of what are termed laparotomy operations, or abdominal sections, which are now so largely and successfully resorted to for the removal of ovarian and uterine tumours, hysterectomy, oophorectomy, ectopic gestations, as well as for many other intraperitoneal morbid conditions, which need not be here enumerated, much less discussed. In all

such instances, however, the result of the case is generally no less dependent on the unremitting and judicious care of the nurse by whom the patient is attended than on the skill of the surgeon by whom the operation is performed. The present chapter will, therefore, be devoted to a brief recapitulation of those points to which the attention of the nurse, whom we may suppose ourselves addressing, in a case where abdominal section is about to be performed, should be directed. These may be thus classified—Firstly, the preparation of the patient for operation; secondly, the arrangements to be made for its performance; thirdly, duties of nurse during the operation; and fourthly her duties in the subsequent care of the patient.

1.—*Before Operation*—On the previous evening, unless otherwise directed, you should see that the patient has a warm bath if possible, not only for personal cleanliness and as a measure of asepsis, but also as a probable means of securing for the then generally nervous woman a much needed sleepful night. Early on the next morning the patient's bowels should be cleared out by a purgative enema, after which, in lieu of her breakfast, she may have a cup of milk with an ounce or two of brandy therein, which is the best possible preparation for the use of the anaesthetic about to be employed, and for the shock of the operation. Before bringing the patient into operation room her abdomen and pubes should be carefully sponged over

Fig. 39.



with carbolic solution, the catheter passed, and the flannel vest and loose drawers (not combinations) adjusted, after which she may be placed on the operating table. This should be protected with an aseptic water-proof sheet, placed over the mattress, and provided with a light, new, woollen shawl or blanket to cover the patient, and a hot water jar to keep her feet warm during operation, if a hot water bed (fig. 39) should not be available for the purpose. The position of table, as to light, etc., in each case must beforehand be directed by the surgeon. Before the operation you must also see that the place in which it is performed is suitably warmed, temperature 60° , that it has been thoroughly cleaned, and is devoid of all superfluous furniture ; you must, moreover, have made provision of such things as it is the nurse's province to attend to, viz., an ample supply of hot and cold water, towels, both dry and soaked in carbolic or sublimate solution. And, as you may be called on to lay out and arrange for the surgeon in proper order the various instruments and appliances which he may require, it will be well that you should have some idea what is likely in such cases to be needed, and what assistants are generally required, in the absence of any of whom you should be ready to give such help as the surgeon may desire you to render.

Asepsis in Laparotomy Operations.—The vital importance of perfect cleanliness in all things relating to operative surgery was strikingly demonstrated by the lesser mortality in abdominal operations consequent on the first introduction of the Listerian, or so called anti-septic system into general use, and which was due rather to the cleanliness than to the germicide potency of that method. This is sufficiently established by the subsequent experience of those who have learned from Mr. Lawson Tait to recognize the fact that whilst asepsis is always feasible and essential to success in laparotomy, antisepsis is in some instances possibly dispensable. In abdominal section cases the same advantages have here as elsewhere followed, the attention given to

the perfect cleanliness of all the surroundings and details of our operations. Bearing in mind, therefore, that, as it has been expressed. "the death-warrant of the patient may be carried by the finger-nail of the attendant," the nurse's, as well as the surgeon's hands and arms, should, immediately before taking part at an abdominal section, be thoroughly scrubbed with hot water and soap with the nail brush. Moreover, as it may prove innimical to those justly dreaded micro-organisms, by which infection is propagated, both nurse and surgeon before touching the patient, should, as a matter of precaution, then immerse their hands in some of the ordinary antiseptic solutions, such as carbolic acid one in 40, or corrosive sublimate one in 2,000, a similar measure being, of course, also adopted by every assistant.

Assistants.—As a rule, the fewer persons present at an ovariotomy, and the less those few interfere with the operation, so much the better will it be for the surgeon and the patient. Besides, the anæsthesist one competent assistant and a trained nurse can generally afford any necessary aid that the operator is likely to require. The chief duty of the former should be to attend to the instruments, while the nurse will have enough to do in minding the sponges, each of which, as received from the surgeon, she must carefully wash in two or three successive waters, as well as in carbolic solution, and then hand back to him when thus thoroughly cleansed.

Instruments.—The best results in abdominal sections, as in other surgical procedure, are probably obtainable by those who accomplish this operation with the minimum amount of necessary instruments. Nor can the most elaborate improvements in the form or multiplicity of these chirurgical appliances, in the smallest degree supply any deficiency in the requisite skill and dexterity of him who employs them. But as no surgeon when about to undertake an abdominal section can predict with certainty the exact con-

ditions or complications that may present themselves on opening the peritoneal cavity, it is absolutely essential to provide beforehand in such cases, not only whatever will be probably required, but also whatever may possibly be found necessary to deal with any of the complications that may be then met with. In laparotomy operations in our hospital, therefore, the house-surgeon is expected to have in readiness all the various instruments and appliances, a list of which he should obtain beforehand from the surgeon, and each of which must be suitably arranged by the nurse on the table immediately beside the operator. She should also have ready an irrigator charged with warm boric solution for flushing the peritoneal cavity; six or eight new, soft, and thoroughly aseptic sponges, which must be very carefully counted immediately before the operation, and again just before its close, and which should be placed by the nurse on a table beside the operator so that he can readily put his hand on them, being until then immersed in any of the solutions just referred to, in shallow trays (fig. 40), and kept covered with a towel until the patient is fully anæstheticised.

In addition to the foregoing there should also be at hand in every abdominal operation not only the before mentioned abundant supply of hot and cold water, but also of boric and carbolic solutions, some aromatic spirits of ammonia, capsules of nitrate of amyl, sul-

Fig. 40



phuric ether, brandy, a hypodermic syringe for injection of ether if required, and, above all, a large bottle of that best of all antiseptics and styptics as well

as of stimulants,—viz., rectified spirits of turpentine, the value of which in each and all of these ways has been amply proved in the writer's practice during the last quarter of a century.

During the Operation.—The nurse, whose proper place is immediately behind the operator will probably have quite enough to do to attend as she should to the sponges. These, when directed, she will supply to the surgeon, from whom, when used, she should be prompt to receive and cleanse them rapidly, but thoroughly, in at least two successive basins of hot water and then, lastly in carbolic, 1 in 40, or sublimate solution, 1 in 2,000, before wringing them out and handing them back to him when required. In so doing she must be most careful in never allowing a sponge to be torn, an accident which would render valueless the subsequent recounting of the sponges, which is always necessary before the completion of any laparotomy, and might, as the writer has seen, lead to fatal consequences from an uncounted portion of sponge being thus left in the peritoneal cavity.

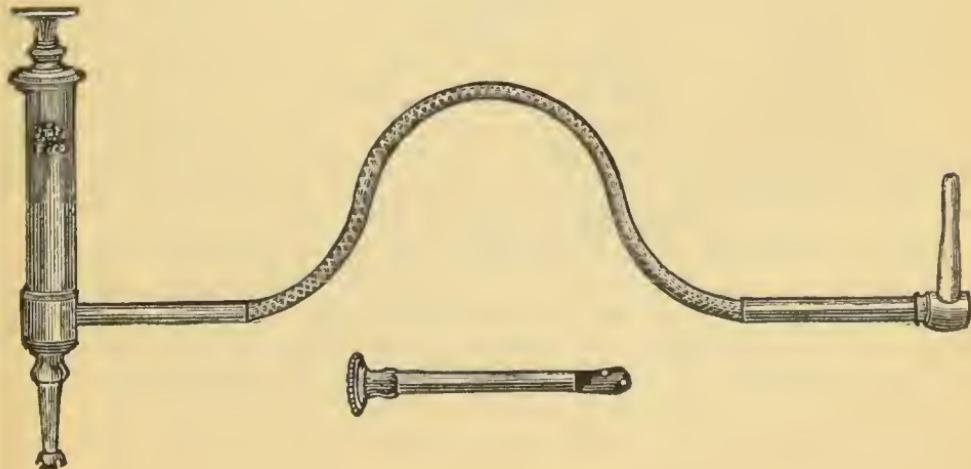
Dressing of the Wound.—As soon as the line of incision has been finally closed by the surgeon, the nurse is then free, if required, to aid him in the cleaning of the abdomen and dressing of the wound. For this purpose, having first carefully sponged away with carbolic or boric solution every trace of blood left by the operation, the line of sutures will be freely dusted by the surgeon with iodoform, over which a strip of iodoform gauze and protective are to be laid, the abdominal walls supported by a few long narrow straps of boric adhesive plaster to lessen tension on sutures, a pad of wood-wool placed over the wound, and a flannel binder carefully adjusted over all these to support the ventral walls. The loose flannel dress worn during operation may be replaced by an ordinary nightgown, after which the patient, covered with a blanket, should be cautiously lifted from the operating table to her bed. There hot jars are to be applied

to her feet ; her head kept low, and lightly covered with a small shawl to assist reaction, and, if necessary for the same purpose, a wineglassful of milk with a little brandy, and thirty drops of laudanum may be thrown into the rectum. As soon as reaction has been thus sufficiently established, the surgeon having satisfied himself that her pulse and general condition are such that his further immediate attention can be dispensed with, and having spoken a cheery word to his patient, will then leave her in charge of the nurse, on whose care the result of the case will now mainly depend.

After Treatment.—For the first few hours after an ovariotomy, as a rule, and under ordinary circumstances, the less the patient is disturbed by either nurse or surgeon the better. The former should then, however, never for a moment be absent from her bedside, and the latter should be in immediate readiness whenever required. Both should be careful and intelligent observers of every change in the patient's condition, but not fussy or needlessly meddlesome in their interference. Her pulse, aspect, and temperature, should be carefully watched and regularly recorded in the chart by the nurse, and any evidence of hæmorrhage or shock immediately communicated to the surgeon. Most modern authorities deprecate the use of opiates and stimulants after ovariotomy, as generally unnecessary and possibly injurious. As, however, the present writer does not himself agree in this view, if the patient has not had the enema already referred to, as soon as she has been made comfortable in bed, he generally gives thirty drops of liquor opii in a wineglasful of champagne, or in a little whiskey and lithia water, to favour reaction from the shock of operation, and to allay subsequent pain, whilst to relieve any sickness of stomach a little hot water sipped slowly, as warm as it can possibly be taken, is far better than ice, or any iced fluid. The former objects should also be aided by the perfect quietude

and subdued light of the patient's chamber. For the next four or five hours after ovariotomy no further stimulants or other nourishment will, as a rule, be necessary or retained. After that time, in teaspoonful doses, milk or chicken jelly may be given if wished for. Within six hours of the operation the catheter should be used, and may be then passed twice a day, or oftener if necessary, for the ensuing week. During the first three days the patient should take as little as possible by the mouth, beyond small quantities of milk, or peptonised beef or chicken broth ; whilst any additional nutriment that may be required may be best administered by enemata of milk, and, if the doctor should think it necessary, a little brandy. In such cases at this time the intestines often become enormously distended by flatus, occasioning great discomfort and straining on the sutures. This may generally be sufficiently relieved by a few drops of turpentine or terebene, given in a teaspoonful of glycerine or syrup, or by the passage of an enema tube. If a laparotomy case is progressing favourably, no medicine whatever, except an occasional opiate draught, or hypodermic of morphia to procure sleep, will be necessary until the seventh or eighth day, when, if the bowels have not been spontaneously moved earlier, an enema may be given for this purpose.

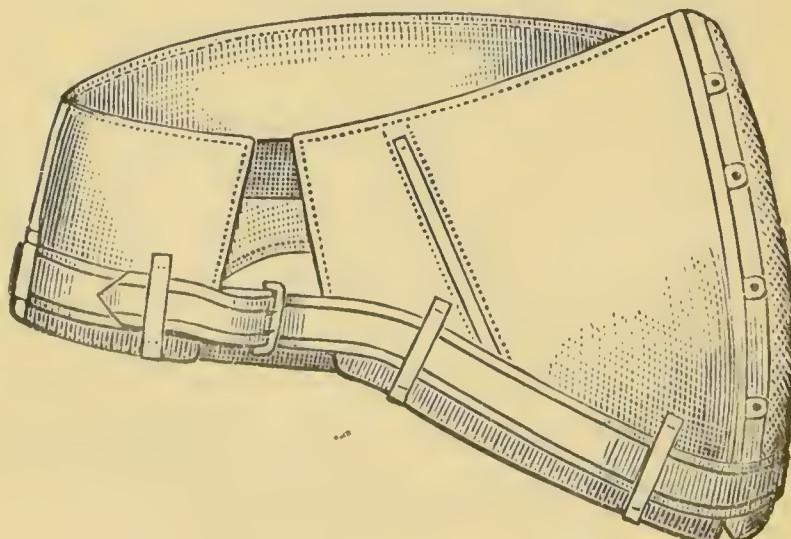
Fig. 41.



Removal of Sutures.—In these days of aseptic surgery, in a favourably progressing case of ovariotomy, there is, as a rule, no necessity for disturbing the dressings for eight or ten days, nor does the writer generally remove the silver wire sutures which he employs until about the tenth day after the operation, when on their removal he hopes to find the line of incision fairly united. Having then cut and withdrawn these sutures, the cicatrical surface is to be sponged over well with warm carbolic solution, and again dusted over with iodoform, covered up, and a fresh binder applied as before.

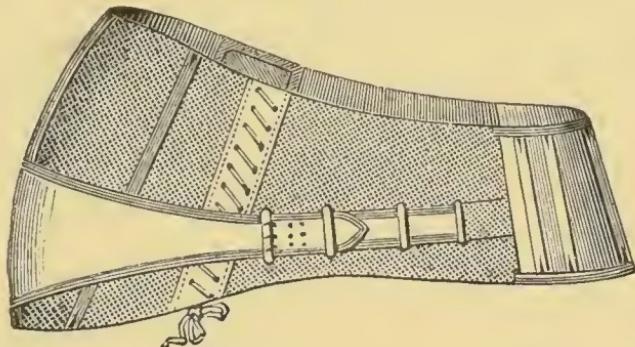
In most instances the patients thus treated and nursed in our hospital have been able to sit up within three weeks after ovariotomy and other laparotomies, and to leave the hospital within a month or six weeks from the date of operation. At the same time it will be well, however, for the nurse to caution her patients in such cases that in order to obviate the otherwise probable occurrence of a ventral hernia, the abdominal walls should for some months after the operation be

Fig. 42.



thoroughly well supported by a suitable abdominal appliance (figs. 42-3).

Fig. 43.



CHAPTER XLVII.

DISPLACEMENTS OF THE UTERUS.

FROM the direct pressure of the intraperitoneal tumours previously referred to, as well as from the coincident impairment of the vaginal and ligamentous supports of the womb, in such cases (as well as after parturition, and under other circumstances) it frequently happens that this organ becomes displaced in various ways from its normal position. These displacements are especially liable to occur after laparotomy operations and childbirth, from any accidental cause, from the then generally relaxed condition of the abdominal walls, which normally largely contribute to the maintainance of the uterus in its natural position.

Without any attempt to enter into details on this subject, which in a work, such as the present, would be out of place, it may, however, be well to say a few words on the different forms of uterine displacements, which in gynaecological nursing you may be thus liable to meet with; and also on the instruments employed for their relief, which, in the absence of the doctor, it may

in some instances, become your duty as a nurse to remove.

It should, in the first place, be observed that the ordinary position of the uterus under normal circumstances, and previous to pregnancy, is one of slight antiflexion. From that position the womb may be abnormally deflected in various directions, viz., firstly, by a more marked or acute bending forward of the fundus, the cervix uteri remaining in its natural position, and to which the term *anteflexion* is applied. Secondly, by a falling forwards of the uterus, not bent on itself but in its entirety, so that the fundus is directed towards the anterior abdominal wall, whilst the os is turned backwards towards the hollow of the saerum, constituting *anteversion*. Thirdly, and more frequently, by the opposite conditions, in which the fundus uteri is either bent or turned in a direct line into the sacral hollow, constituting in the former case *retroflexion*, and in the latter *retroversion*. Fifthly, the uterus whilst still retaining its almost horizontal position may be forced down into the pelvic cavity forming a *prolapse* of the womb; or, sixthly, it may in the same way be completely or partially extended beyond the vulva, constituting what is termed *procidentia uteri*, and is then commonly ulcerated, as well as displaced. Seventhly, the last and gravest form of displacement of the womb which must be here alluded to is that in which the dislocation occurs as a chronic form of inversion, the acute form of which has already been alluded to.

The general history, symptoms, and treatment of these various forms of uterine displacements would be entirely beyond the scope of our handbook. This subject is here referred to merely in order that the nurse may be aware of the characteristics of those deviations from the normal position of the womb, so as to place such cases under competent medical aid as soon as recognized. Thus, too, she may possibly be better enabled to assist the doctor in any such way as he may direct in their treatment.

In that treatment the essential objects are, firstly, the reposition of the displaced uterus in its normal situation ; and secondly, its retention there by a suitable and properly adjusted mechanical support, or pessary. The form of the latter, which will be selected by the medical attendant, must obviously be dependent on the nature of the displacement in each case. Thus, for instance, if dealing with a retroflexion or retroversion, a Hodge or lever pessary, or the writer's roller pessary

Fig. 43.

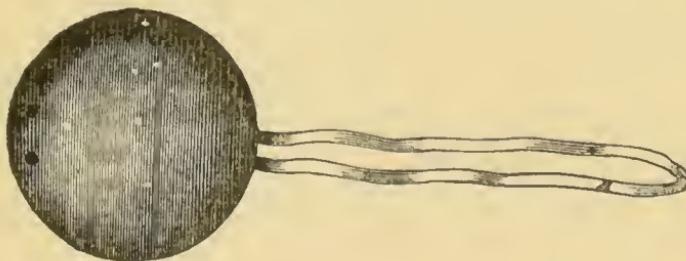


Fig. 44.



(fig. 43) may be used, whilst in the treatment of a prolapsed uterus the ring (fig. 44) or globe (fig. 45) may possibly be employed.

Fig. 45.



The choice of these or the various other pessaries used in different displacements is, however, a matter entirely for the doctor's discretion. At the most all the nurse should have to do in such cases is to carry out his directions, if he thinks it necessary to entrust her with the removal of any of these instruments. In such

cases the patient should subsequently wear a well-fitting abdominal belt to assist in taking the pressure of the viscera from off the uterus.

CHAPTER XLVIII

DISINFECTANTS AND ANTISEPTIC METHODS IN GYNÆCOLOGICAL AND OBSTETRIC CASES.

BEFORE terminating our course we must allude to some of the principal antiseptics or disinfectants which at the present day, either in gynæcological or in obstetric nursing you may be directed to employ, and also to those local applications or dressings, with the use of which you should be acquainted. In so doing we must define the meaning of certain terms frequently confounded in this connection. Firstly, then, by the word "asepsis" is implied, as previously mentioned, the absence of putrefaction, or sepsis, *i.e.*, perfect surgical cleanliness; secondly, by "antiseptics" we mean all agents by which the development of the germs, or micro-organism on which sepsis depends, may be prevented or arrested; thirdly, disinfectants are all agents, fluid, solid, or gaseous, capable of destroying the infectious character of infectious material; and, fourthly, "deoderants" are the agents by which the odour exhaled by putrescent, or offensive matter, can be destroyed.

DISINFECTION OF INSTRUMENTS AND CLOTHES.

Heat.—Of all germicides, none are so potent as extremes of temperature, and more especially a heat so high as to coagulate and desiccate albuminoid material, and, hence, necessarily disastrous to infective and other micro-organisms. To be thus effective, however, the heat employed should be continuously applied for some hours, and should be at least in excess of 212° ,

or the boiling point of water. It being evident that such heat cannot be applied with impunity to the human body, the use of heat as a germicide is restricted to the disinfection of surgical instruments, or for the purification of clothing, and other materials in which the germs of infection may be lodged, and from which they may be removed by baking for four or five hours in a drying closet, or oven, at a temperature of 225° , or through the application of steam at a temperature of 212° , by which, with the aid of a suitable apparatus, any infected clothing or woollen material may be penetrated with a fatal result to the contained bacteria.

Disinfection of Patient's Room.—As a measure of precaution, before gynaecological operations or confinements, and after infectious disease, the patient's room, being first stripped of superfluous furniture, woollen carpets and hangings, and having, with all its contents, being thoroughly cleansed with strong carbolic soap and hot water, may be disinfected by certain gaseous antiseptics, and more especially by the fumes of sulphurous acid, chlorine, or iodine. The first may be employed by burning in a previously closed room common sulphur, placed in soup plates throughout the apartment, in the proportion of three pounds of sulphur to every thousand cubic feet of space. Chlorine gas for the same purpose, and in the same way, is generally used by means of vessels containing chloride of lime, moistened with water or with sulphurous acid, whilst the vapour of iodine may be set free by placing a small quantity of metallic iodine on a hot plate, or in a vessel under which a spirit lamp is lighted.

We now proceed to refer to the various antiseptics that the nurse in these cases may have to employ.

Carbolic Acid.—Probably the most generally useful of all gynaecological germicide or antiseptic agents is carbolic acid, which in the proportion of one part of acid to twenty of water, may be applied to the skin of the

part to be operated on, as well as to the sponges, instruments, etc. A solution of one part to forty is used for washing sponges during an operation, for the hands of the surgeon and assistants, and for the changing of dressings, whilst for vaginal and uterine irrigators, a still weaker solution, viz., one in eighty or a hundred parts of water will generally be found sufficient.

Corrosive Sublimate, or bichloride of mercury, if one of the most powerful of germicides, is, however, as has been previously pointed out, also the most dangerous in its possible effects on the patient, of all antiseptic agents used in gynaecological or obstetric practice. It should always be borne in mind that even in very dilute solutions, corrosive sublimate is liable to be rapidly absorbed into the system, and hence that it is specially unsuitable for employment, as recommended by some writers, for intra-uterine injections, particularly soon after delivery, under which circumstances death has repeatedly resulted from its employment. Moreover, its use is destructive to surgical instruments, which, nevertheless, are for antiseptic purposes, frequently immersed in a one in 2,000 solution of this salt before and during operations. If used for this object or for the disinfection of the surgeon's or nurse's hands, the solution should be distinctly coloured, as well as carefully labelled "poison," and thrown away immediately after use, and moreover, should never be stronger at most than one in 2,000.

Boric Acid has for many years been largely employed in the writer's wards as the most generally suitable of all the milder antiseptics used in gynaecological practice, being specially adapted for such purposes by its power for arresting putrefactive changes, its comparative freedom from locally irritant, or constitutionally poisonous properties, absence of any unpleasant odour, and its ready solubility, which enables it to be used for vaginal or uterine irriga-

tion, as well as by the irrigator for vaginal and endo-uterine disease, and, lastly, as a substitute for iodoform as a dressing in laparotomy cases.

Iodoform.—Probably to no remedy does modern antiseptic treatment owe so much as to that now referred to, which, though discovered upwards of half a century ago by Dr. Glover, has only comparatively speaking recently come into general use, more especially in gynaecological cases. In these its influence in promoting healthy granulation and promoting the healing of wounds is well evinced in the treatment of amputations of the cervix, as well as of laparotomy and other operation cases, in which it may be dusted over the wounded surface, which is then dressed with iodoform gauze. Whilst its powers in correcting or diminishing discharges, and allaying painful sensibility, renders it specially useful when employed locally by the vaginal insuflator, or in the form of vaginal suppositories in the treatment of cervical and uterine cancer, and some other diseases. The objections to its use are, firstly, and least in importance, its abominable and persistent odour. This, however, has to a large extent been overcome by the writer, at whose suggestion a deoderized iodoform, made by trituration with camphor and oil of cloves, etc., has been prepared. The second, and by far the most important, objection to the injudicious use of iodoform is that serious and even possibly fatal effects may follow its too free employment. Hence, for the benefit of nurses to whom the application of this antiseptic dressing is frequently confided, we may here cite a brief reference to these dangers from an excellent paper on this subject by Mr. Hayes, senior surgeon to our hospital. “The ill effects of iodoform may be classed into those of minor degree, and the veritable intoxication, or graver degree. In the light form the patients experience headache, loss of memory, and other nervous symptoms. The pulse becomes enormously accelerated, the temperature perhaps slightly elevated, but these

symptoms subside within a few days. In the grave form hallucinations and delirium of a furious or suicidal character, or meningitis occurs. Food is refused ; urinary secretion becomes scanty ; the pulse is rapid ; the temperature rises to perhaps 104° F. ; the *dénouement* is almost always fatal, the patient dying in a state of coma."

These facts are sufficient to impress on gynæcological nurses the necessity of great caution in the use of iodoform dressings or applications, with regard to which we would urge on them to bear in mind Mr. Hayes' conclusion, viz., "that iodoform should, in all cases where its use is indicated, be applied in small quantity ; that especial caution should attend its use when much adipose tissue is exposed, and when the wound is extensive ; that its employment is more or less contra-indicated by advanced age, tendency to fatty degenerations, diseased condition of the heart or lungs, and where there exists a susceptible condition of the nerve centres." On all these points, however, it will be for the doctor to decide before ordering the nurse to apply iodoform dressing in any gynæcological case.

Peroxide of Hydrogen. This, although introduced many years ago by Dr. Richardson, of London, has only recently come into extensive use as an antiseptic and deoderant local application. Nor are its advantages in these ways even yet sufficiently generally recognised. As a germicide and pus-destroyer its value is unquestionable, whilst its non-poisonous and non-irritating qualities renders it specially adapted for utero-vaginal purposes. For example, in the correction of all offensive discharges from the genital canal, and more particularly in cases of uterinae cancer, it may be employed with the vaginal syringe or uterine irrigator with great benefit. In such instances, and for other local antiseptic or cleansing and deoderant gynæcological or obstetric objects, the ten-volume preparation of peroxide of hydrogen may be injected with an equal amount of hot

water, or even undiluted, and will we believe be found not only a potent antiseptic, but also one of the most effectual and safe deoderizers that can be employed in those cases.

Creolin.—Prepared from coal-tar by distillation, is a thick, brown syrup, with a tarry odour; an aromatic, burning taste; soluble in alcohol, chloroform, and ether; and forming an alkaline emulsion with water. It is non-poisonous, a good deodorizer, does not injure the hands or instruments, and is a lubricant in sufficient degree to substitute oil or vaselin. It is also slightly haemostatic. As a germicide, compared with carbolic acid, a three per cent. solution of creolin is equivalent to a five per cent. solution of carbolic acid, and a two per cent. solution of creolin to a three per cent. solution of carbolic acid. As compared with corrosive sublimate, creolin is a much less active germicide, but there is less danger from poisoning. The following objections have been urged against the drug: severe local reaction, poisoning, and obscuring the view of the parts to which it is applied.

Lysol in Gynaecology and Obstetrics.—As a germicide a solution of less than one per cent. of lysol is equal in efficacy to a five per cent. solution of carbolic acid, and two per cent. solution of creolin. Recent tests of the drug at Dr. Martin's Institute, in Berlin, incline to the belief that it is an ideal antiseptic for gynaecological and obstetric practice. It is, soluble, active, non-poisonous, non-corrosive, and cheap. In one per cent. solutions it may be used for the hands, the instruments, and the parts. In twenty-three cases of septic abortion, removal of the septic matter, followed by the use of a one per cent. lysol solution, brought the temperature down to normal in twenty-four hours. The directions given for the aseptic toilet with lysol are as follows:—The hands and arms of the operator should be washed in one per cent. warm solution of lysol for two minutes, and thoroughly scrubbed; the nails should then be most carefully cleansed, and the hands again washed

in a similar solution for two minutes, and the nail-brush used again. The external parts should be washed in the same solution, which may also be injected if necessary.

Although the writer objects, as a rule, fully as much as most medical men very properly do, to the use of proprietary remedies, nevertheless, there are some agents of this class, the formula or composition of which being published, and which being largely employed as anti-septics or deoderants in gynaecological or obstetric cases, must therefore, be here referred to, viz., "Condy's Fluid," "Sanitas," and "Listerine." The former is a solution of permanganate of potash, which may be employed in the proportion of one part to twenty of water for washing out the vagina or uterus, or for the deoderization of any offensive discharges therefrom. In like manner, and in similar cases, "Sanitas," which is a mild terebinth preparation, may also be found very useful in many instances, whilst lastly, another of the deoderants that the gynaecological nurse may occasionally be directed to use as a vaginal injection for the removal of offensive discharges and secretions, is that known as "Listerine," which, according to the published formula, is a compound of the anti-septic constituents of thyme, eucalyptus, and other aromatic ingredients. Each fluid drachm also contains two grains of benzo-boracic acid. This preparation may be used in the same way and in similar cases to Condy's Fluid or Sanitas.

Turpentine and Terebene.—By far the cheapest and most generally available, however, of all deoderants, and according to our experience, the most effectual as a deoderizer, and, to some extent, also as an antiseptic for utero vaginal use, is rectified turpentine, or its preparation terebene. For many years the writer has employed the former, as an endo-uterine remedy in the prevention or for the arrest of puerperal septicæmia, and also for relieving and diminishing the fœtor of the discharge in cases of cancer of the uterus. For these

purposes either rectified spirits of turpentine or pure terebene may be used in the proportion of half an ounce to a pint of boiling water, which should be propelled with the syringe from one jug to another until the temperature is reduced to 110° , by which time the turpentine will have become temporarily sufficiently broken up or subdivided, and will remain so sufficiently long to allow the injection or irrigation to be accomplished.

CHAPTER XLIX.

LOCAL DRESSING AND APPLICATIONS EMPLOYED IN GYNÆCOLOGICAL NURSING.

In this concluding chapter we shall refer briefly to those antiseptic and other local dressings or applications, the use and methods of employing which nurses in attendance on gynæcological cases in our hospital are expected to have such a knowledge of as will enable them to assist the medical attendant in their preparation and application when so directed. Of the many dressings of this class, probably the most generally useful in laparotomy operations are carbolic, cyanide, and sublimate gauzes, which, therefore, may be first referred to in this connection.

Carbolic Gauze.—In our own practice we have usually employed this carbolized application in preference to sublimate gauze, or any other dressing of a similar kind after ovariotomy or other abdominal sections. It may, if necessary, be extemporaneously prepared by adding one part of carbolic acid to five parts of resin, and seven parts of wax, melted together, which compound should be applied to coarse muslin, so as to form a thin film of the plaster over the gauze. This, when hardened, is used for covering the parts to be protected, to which it may be applied in light layers, in size pro-

portionate to the discharge, if any, to be anticipated, a piece of thin mackintosh being interposed beneath the outer layer of gauze. The latter serves to prevent the discharge from soaking directly through the central part of the dressing, thereby, as Mr. Bishop observes, washing out the stored up acid, and allowing the direct access of putrefactive organisms to the cavity, as shown by the disastrous consequences that have followed from any defect in the mackintosh. A small portion of gauze wrung out of the one to forty carbolic acid solution is also applied over the wound before the ordinary eight-fold dressing, so as to prevent possible mischief from putrefactive organisms accidentally adherent to the inner layer of the gauze.

Cyanide, and other antiseptic Gauze.—The former was originally suggested by Sir J. Lister for general surgical purposes, and though, as he has pointed out by no means always devoid of irritating properties, is still occasionally employed as an antiseptic dressing in laparotomy cases. It consists of gauze passed through a solution of cyanides of mercury and zinc, of which, when properly prepared, it should contain from two to three per cent. If obtained dry, before being used it should be moistened in a 1 to 4,000 mercurial solution, and being then laid on the wound, will probably for a considerable time retain sufficient cyanide to prevent the invasion of organisms. A far safer and equally effectual application, however, for this purpose is eucalyptus gauze, though some surgeons prefer to employ iodoform gauze for the same purpose.

Wood Wool as a Gynaecological Dressing.—In the dressing of abdominal operations, as well as for that of perineal and other wounds and diseases of the external vulval parts, this material furnishes an excellent aseptic, cheap and easily applied dressing, even if it be not the case that, as has been claimed, its chemical composition, and its combination with resinous matter and etheric oil, impart powerful antiseptic properties. The value of prepared wood as a dressing was first dis-

covered by a German surgeon. This material is so flexible that it can be tightly bound on to the wound without danger, it rapidly absorbs and gives off moisture, thus fulfilling "the two great essentials of a good dressing—that it should be dry and seldom need changing." The same substance is now largely utilized for the purpose of the so-called hygienic diapers, which consist of a pad containing 90 per cent. of wood wool, mixed with 10 per cent. of cotton wool, and impregnated with 0·3 per cent. of corrosive sublimate, or some other antiseptic. These it is stated absorb discharges readily, and prevent any offensive odour; but their chief merit is that they can be burnt immediately after use, a custom which as the *Medical Times* long ago predicted will one day become universal.

Antiseptic Pad and Dressing.—In the same way, and equally useful as a dressing in the operation cases above referred to, is the antiseptic sponge and wound dressing, which, in accordance with the suggestions of Mr. Gamgee and Sir Spencer Wells, are manufactured by Messrs. Burroughs and Wellcome. For this, as described in the *British Medical Journal*, it is claimed that it differs from the ordinary sponge inasmuch as it is a powerful absorbent in its dry state, and need not be previously wetted. Its absorbing power is said to be equal to fully sixteen times its own weight. It consists of concentric layers of absorbent cotton and cocoa-nut, or like fibre, within a covering of absorbent gauze. Its antisepticity as is thus stated is secured by placing in the centre a thin and easily friable capsule containing the antiseptic of any kind desired, eucalyptia, or thymol, carbolic acid, bichloride of mercury, which may be preserved intact until required for use. All that is required is a sharp squeeze of the sponge or pad just before using it; and by subsequent burning, all fear of sponge infection is avoided. Finally, in this connection we must describe the use or method of employing certain local applications to the genital

eanal, which may in some instances be entrusted to the gynæcological nurse. Of these, such as iodoform, etc., have been sufficiently referred to in the preceding chapter, and, hence, we need here only mention others which are also in common use.

Glycerine Vaginal Tampon.—For this purpose following the late Dr. Marion Sims' directions you are to take as much of Lawton absorbent cotton, or other fine cotton, as can be held in the hollow of your hand. Compress this into an ovoid ball, the size of a pigeon's egg, across the centre of which a stout silk or hemp thread is to be fastened, to facilitate subsequent removal. Then immerse this in a cup containing a couple of ounces of Price's pure glycerine, and stir it about until all the glycerine has been absorbed by the cotton, which is then converted into a soft, pulpy, and tenacious mass, which should be introduced up to the os uteri, through a cylindrieal speculum, so as not to allow the glycerine to be expressed during its passage through the vaginal orifice. This application may thus be left *in situ* for at least twenty-four hours, and after its removal by means of the affixed ligature, the vagina should be washed out by the irrigator. The effect of glycerine thus used is, as was pointed out originally by the writer above-named, very remarkable. It has great affinity for water. A bit of cotton saturated with glycerine, and exposed to the air, will retain moisture for weeks. When applied to the neck of the womb in the manner just directed, it sets up a capillary drainage, producing a copious watery discharge, depleting the tissues with which it lies in contact, and giving them a dry, clean, and healthy appearance. When such a dressing is applied to a pyogenic surface on the cervix uteri for twelve hours or more and then removed, the cut or sore will be as clear of pus as if it were just washed and wiped dry. At the same time the action of glycerine in this way is not devoid of objections. In the first place, it is messy, and inconvenient to the practitioner, or to the nurse, who has to prepare and

introduce the saturated tampon ; and, secondly, the profuse watery discharges following its introduction is a source of discomfort often much complained of by the patient, and when long persevered in, as must frequently be the case, is apt to produce troublesome excoriations of the external parts—more especially if the glycerine be not of the purest quality.

Boric Acid.—For the foregoing reasons the writer now comparatively seldom directs his nurses to use the glycerine tampon, finding that very similar benefit, without those disadvantages may be obtained by the dry boric acid treatment advocated by Dr. Goodell and by Dr. Duke. Adopting their recommendation, we have, during the past few years, employed this agent by the latter's insufflator and tube as an endo-uterine application in a considerable number of instances of congestive hypertrophy or subinvolution, and have found that in most instances it possesses the advantages claimed, being aseptic, cleanly, and facile in use, whilst efficient as powerful local astringent, and also, in a minor degree, producing serous exudation, and thus depleting the hyperæmic uterus.

Iodine and Tanno-Terebinth.—Of the many topical methods, or local dressings, in the application of which the nurse may be required to assist the gynaecologist in the treatment of congestive hypertrophy and chronic subinvolution of the uterus, the writer has obtained the most satisfactory results from the free application to the endo-uterine surface of iodized phenol, which in some instances may be followed by the introduction of a small tampon, soaked in a mixture of tannic acid, glycerine, and rectified turpentine. This preparation, which, for lack of a better name, may be described as tanno-terebinth, forms a creamy oleaginous fluid, which, when employed in the manner referred to, acts as a powerful local astringent. The use, of this or any other entro-uterine application being a matter for the doctor and not for the nurse, need not be here further referred to. The latter is, however,

frequently directed to introduce vaginal applications or astringents, one of the best of which is a piece of cotton saturated in "tanno-terebinth," and applied in the same way as the glycerine tampon before described. For the latter, moreover there are many other substitutes, which may be similarly applied to the os and cervix uteri, one of the most important of which is ichthyol, a recently discovered antiseptic bituminous preparation, which, by a small tampon of cotton, or wood wool, smeared with a 25 per cent. ointment, made with lanoline, may be thus brought in contact with these parts. Besides this, other local dressings are now directed by modern practitioners, under whose authority the following may be mentioned as occasionally ordered to be used in gynaecological dressing, viz., (1) fluid extract of hydrastis canadensis; and (2) hazaline; whilst in the form of powder we have (3) iodoform, and, (4) salol, which are used either by vaginal inflation, or locally introduced by suppositories, in the latter of which ways may also be applied that excellent antiseptic, oil of eucalyptus. The circumstances and manner in which these or other similar agents should be employed must, however, be determined by the medical attendant in each case.

Nor for the same reason shall we prolong this chapter by any details with reference to the gynaecological application by the nurse of massage, electricity, and other methods occasionally employed in such cases. On these points we have here only to observe that whilst Faradization and other electrical methods of treatment, as well as massage, may be found serviceable in appropriate instances in other departments of nursing, our own experience would lead to the conclusion that in very few, if any conditions in our branch of practice, can electricity possibly be usefully applied by a nurse, and, secondly, that under no conceivable circumstances should massage ever be employed by her, or by others, in the local treatment of gynaecological cases.

These topics have, therefore, been designedly eliminated from this work, the chief object of which is merely to supply all that practical information on the subjects discussed which the writer believes to be necessary for those to whom it is especially addressed ; and in which he ventures to hope the reader may find whatever should properly be contained in a—HANDBOOK OF MODERN OBSTETRIC AND GYNÆCOLOGICAL NURSING.

THE END.

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